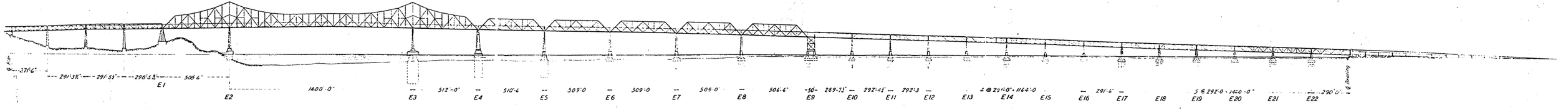
Superstructure East Bay Crossing (Contract No. 04-7)

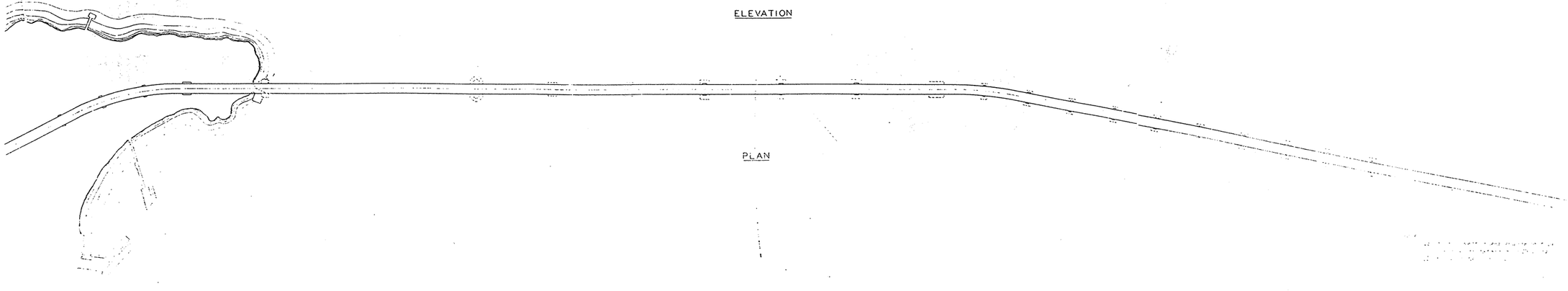
The as-built drawings, which are contained in these CDs, are scanned from drawings of the existing structure for the convenience of the contractor and as a means to convey to the contractor the available information regarding the existing structure. It is to be understood that no claim is being made as to the accuracy or completeness of the said information and that the State of California or its officers or agents shall not be responsible for the manner in which the contractor interprets and uses this information or for the accuracy, currency or completeness of these scanned as-built drawings. The contractor shall be responsible to obtain, at the contractor's expense, any additional information that the contractor deems necessary for completely and accurately assessing the existing conditions of the structure. The contractor shall not be entitled to any compensation for any claim arising from inaccuracy or insufficiency of these as-built drawings or in anyway related to these drawings.

37. East Bay Crossing Bent E11 Details of Base
38. East Bay Crossing Cantilever Structure Cross-Section
39. East Bay Crossing 504 Ft. Spans Cross-Section
40. East Bay Crossing 288 Ft. Spans Cross-Section
41. East Bay Crossing Roadway Slab Details
42. East Bay Crossing Stress Sheet Upper Deck
43. East Bay Crossing Drainage Details
44. East Bay Crossing Cantilever Structure Panel Point LS4
45. East Bay Crossing Cantilever Structure Panel Point UC6
46. East Bay Crossing Cantilever Structure Panel Point LA8
47. East Bay Crossing Cantilever Suspended Span Panel Points LS5 and LS6
48. East Bay Crossing Cap Details for Bent YB-3
49. Yerba Buena Piers YB2 YB3 YB4 and E1 Plans and Elevations
50. East Bay Crossing Bents E5 to E8 incl. Details of Cap
51. East Bay Crossing Erection Data-Bents
52. East Bay Crossing Expansion at YB3 Framing for Upper & Lower Deck
53. East Bay Crossing Cantilever Span Upper Deck Connection to MO-LO
54. East Bay Crossing Expansion Joints (Sup. Dwg 87)
55. East Bay Crossing Expansion Joints (Sup. Dwg 88)
56. East Bay Crossing Suspended Span Joints US3-US4-US5
57. East Bay Crossing Suspended Span-Joint MSI
58. East Bay Crossing Suspended Span Joint MSI
59. East Bay Crossing Suspended Span Joints MS3 & MS5
60. East Bay Crossing Cantilever Structure-Panel UC7-USO Jacking Brackets
61. East Bay Crossing Cantilever Span-Joint UCI
62. East Bay Crossing Cantilever Structure Panel Points LC1, LC2, and LC3
63. East Bay Crossing Cantilever Structure Panel Points LC5, LC6, and LC7
64. East Bay Crossing Cantilever Span Joint Mo
65. East Bay Crossing Cantilever Span Panel Points MC1 and MC2
66. East Bay Crossing Cantilever Span Panel Point MC3
67. East Bay Crossing Cantilever Span Panel Point MC5
68. East Bay Crossing Cantilever Span-Joint MC7
69. East Bay Crossing Joint MA9-Anchor Span
70. East Bay Crossing 504 Ft. Spans Panel Points L1-L2-L3-L5-L6
71. East Bay Crossing 504 Ft. Spans Panel Point M1
72. East Bay Crossing 504 Ft. Spans Panel Points M3-M5
73. East Bay Crossing Cantilever Structure Cambered Lengths
74. East Bay Crossing 288 Ft. Spans-YB1 to E1 Cambered Lengths
75. East Bay Crossing Cantilever Structure Panel Points LC7 & LSO
76. East Bay Crossing Cantilever-Top Laterals & Struts UC4 & UA4
77. East Bay Crossing Cantilever Structure Panel Point LA4
78. East Bay Crossing Anchor Bolt Plan at Beam Seats
79. East Bay Crossing Bents E13 to E16 incl. Details of Base

ROADWAY PROFILE



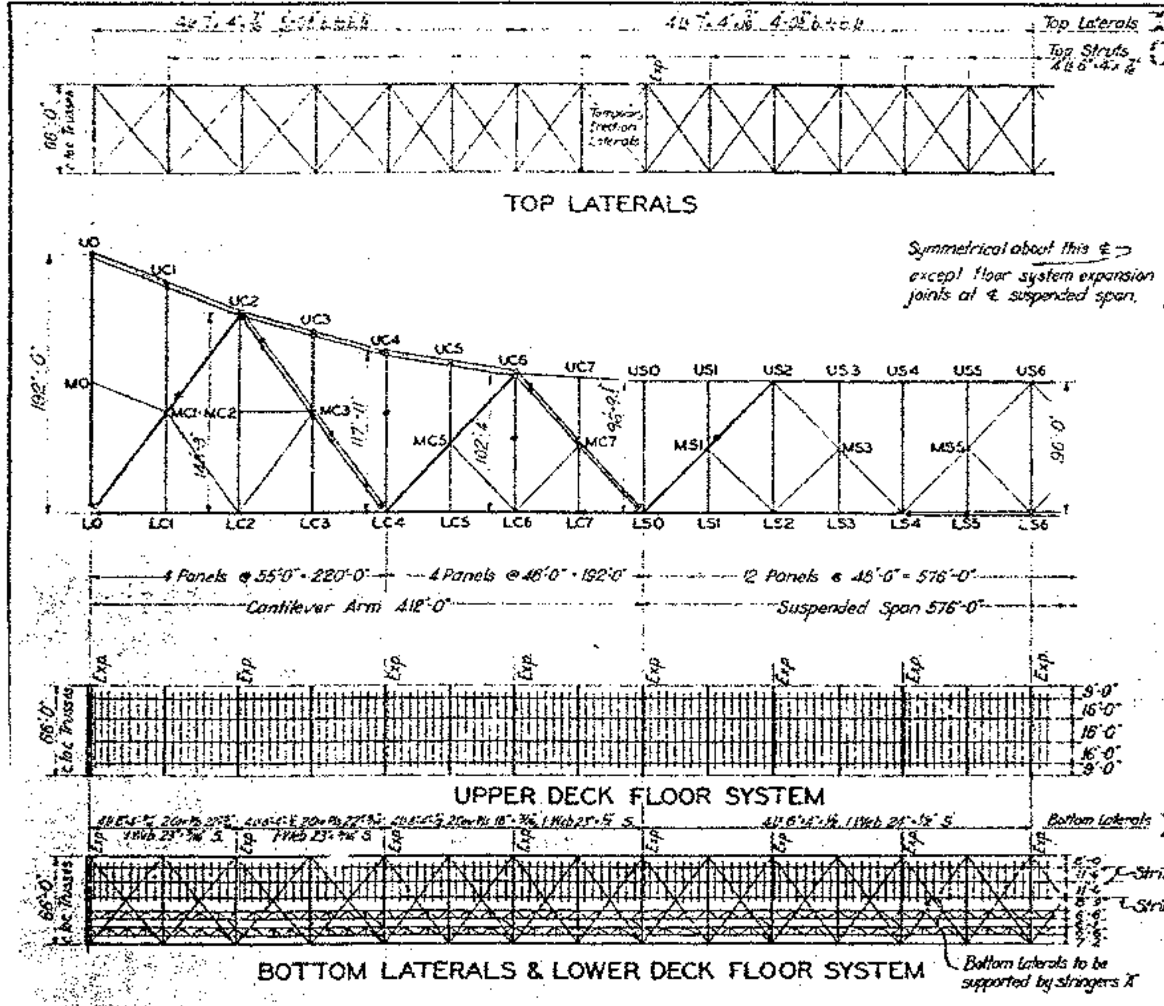
ELEVATION

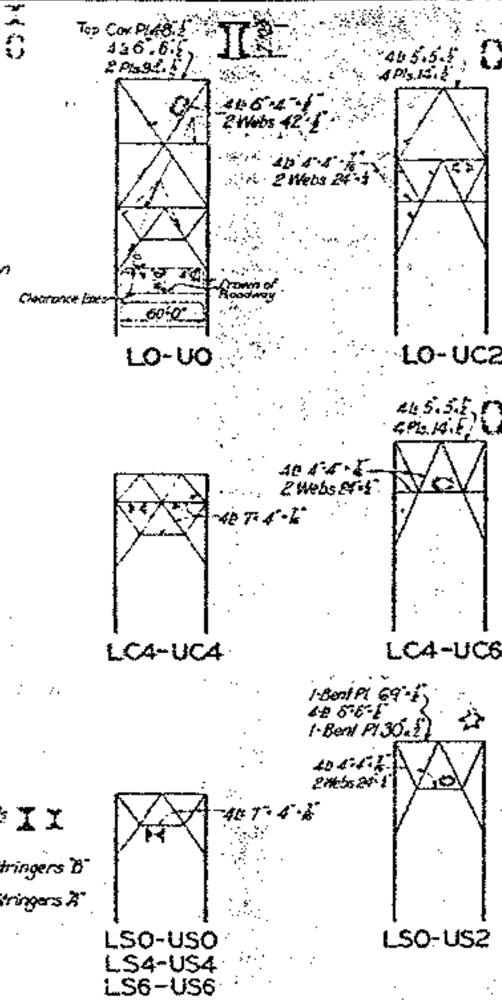


PLAN

APPROVED

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
EAST BAY CROSSING
GENERAL PLAN & ELEVATION





CANTILEVER ARM

Member	Temp T	Wind W	W+Lat	Erection E	Erection Wind EW	North Truss Dead D	North Truss Live L	North Truss Case	North Truss Design Total	South Truss Dead D	South Truss Live L	South Truss Case	South Truss Design Total	Section	Material		Area Gross	Area Net
LO-LC2	±400	±3267	±4296	-	±2647	-9929	-2807	VI	-16,029	-9100	-3257	VI	-15975	4∠ 6"-6"-1", 8 Webs 48"-1, 2 Covs. 26"-1"	N		496.0	
LC2-LC4	±400	±2131	±2881	-	±2003	-9971	-2748	VI	-14,626	-9450	-3676	V	-14,966	4∠ 8"-6"-1", 4 Webs 48"-¾", 2 Covs. 27"-1", 4 Webs 48"-1"	N		474.0	
LC4-LC6	±400	±690	±1824	-	±1328	-3220	-1047	VI	-5958	-3045	-1402	VI	-5970	4∠ 8"-6"-¾", 4 Webs 48"-¾", 2 Covs 30"-¾"	S		234.8	
LC6-LC7	±400	±1000	±2015	-	±953	-3260	-982	VI	-6166	-3080	-1313	VI	-6152	4∠ 8"-8"-¾", 4 Webs 48"-¾", 2 Covs 30"-¾"	S		234.8	
LC7-LS0	±400	±1305	±2183	-	±953	-3260	-982	VI	-6334	-3080	-1313	VI	-6319	4∠ 8"-8"-¾", 4 Webs 48"-¾", 2 Cov Pls 36"-⅝"	S		234.8	
UO-UC2				+	+571	+13348	+3559	I	+16,907	+12670	+4774	I	+17444	16 Bars 16"-2"	HT		512.0	512.0
UC2-UC4				+	+435	+7287	+2051	I	+9,338	+6,900	+2738	I	+9638	12 Bars 14"-1⅝"	HT		283.5	283.5
UC4-UC6				+	+425	+7,121	+2007	I	+9,128	+6,730	+2678	I	+9,408	4 Bars 14"-1⅝", 8 Bars 14"-1⅞"	HT		276.5	276.5
UC6-US0				+	+203	0	0	IV	+	0	0	IV	+	4∠ 8"-6"-¾", 2 Webs 45"-¾"	S		114.2	93.7
LO-MC1						-4173	-1066	I	-5239	-3980	-1420	I	-5400	4∠ 6"-6"-¾", 2 Webs 45"-¾", 2 Webs 45"-¾", 2 Covs 30"-⅝"	S		243.0	
MC1-UC2						-3665	-944	I	-4609	-3500	-1259	I	-4759	4∠ 8"-6"-¾", 2 Webs 45"-¾", 2 Webs 48"-⅝", 2 Covs 30"-⅝"	S		215.5	
UC2-MC3						+5391	+1479	I	+6870	+5110	+1981	I	+7091	8 Bars 14"-1⅞"	HT		210.0	210.0
MC3-LC4						+4956	+1390	I	+6346	+4700	+1860	I	+6560	4 Bars 14"-1⅝", 4 Bars 14"-1¾"	HT		192.5	192.5
LC4-MC5						-5570	-1600	I	-7170	-5270	-2143	I	-7413	4∠ 8"-8"-⅝", 2 Webs 48"-⅝", 4 Webs 45"-⅝", 2 Webs 32"-¾", 2 Cov Pls. 30"-⅝"	S		323.5	
MC5-UC6						-5163	-1490	I	-6653	-4590	-1997	I	-6587	4∠ 8"-6"-⅝", 6 Webs 45"-¾", 2 Cov Pls 29½"-⅝"	S		298.5	
UC6-MC7				+		+5117	+1534	I	+6651	+4840	+2050	I	+6890	8 Bars 14"-1⅞"	HT		203.0	203.0
MC7-LS0				+		+4765	+1436	I	+6201	+4500	+1917	I	+6417	8 Bars 14"-1⅞"	HT		189.0	189.0
UC2-LC2						+1348	+540	I	+1888	+1281	+595	I	+1876	4∠ 6"-6"-¾", 2 Webs 32"-¾"	S		87.8	75.4
UC4-LC4						+672	+221	I	+893	+632	-296	I	+928	4∠ 6"-4"-⅜", 2 Webs 27"-⅜"	S		50.5	41.0
UC6-LC6						+982	+475	I	+1457	+924	-520	I	+1444	4∠ 6"-6"-⅜", 2 Webs 26"-⅜"	S		72.8	59.7
MC1-LC1						+510	+305	I	+815	+476	+359	I	+835	4∠ 8"-6"-⅝", 1 Web 32½"-½"	S		45.5	39.8
MC3-LC3						+500	+305	I	+805	+465	+359	I	+824	do do	S		46.5	39.8
MC5-LC5						+387	+268	I	+655	+358	+331	I	+689	4∠ 8"-6"-½", 1 Web 32½"-½"	S		43.2	36.5
MC7-LC7						+398	+268	I	+666	+369	+331	I	+700	do do	S		43.2	36.5
UC1-MC1				-		-157	0	IV		-157	0	IV		4∠ 6"-4"-½", 2 Webs 27"-⅜"	C		50.5	
UC3-MC3				-		-103	0	IV		-103	0	IV		do do	C		50.5	
UC5-MC5				-		-89	0	IV		-89	0	IV		do do	C		50.5	
UC7-MC7				-		-45	0	IV		-45	0	IV		2 ⌶ 16" @ 42.7#	C		25.0	
MC1-LC2						-519	-190	I	-709	-498	-222	I	-720	4∠ 6"-4"-⅜", 2 Webs 30"-½"	C		54.2	
MC3-LC2						-447	-190	I	-637	-426	-222	I	-648	do do	C		54.2	
MC5-LC6						-410	-184	I	-594	-390	-226	I	-616	4∠ 6"-4"-½", 2 Webs 24"-½"	C		43.0	
MC7-LC6						-356	-184	I	-540	-336	-226	I	-562	4∠ 6"-4"-⅜", 2 Webs 24"-½"	C		40.7	
MO-MC1				+		0	0	IV		0	0	IV		4∠ 6"-4"-½", 2 Webs 24"-½"	C		43.0	34.5
MC2-MC3						0	0		0	0	0		0	2-⌶ 18" @ 42.7#	C		25.0	
UO-MO						-10,210	-2640	I	-12,850	-9710	-3550	I	-13,260	16∠ 8"-6"-⅝", 4 Webs 72"-½", 2 Webs 31½"-⅜", 4 Webs 15"-⅜"	N		494.3	
MO-LO						-10,644	-2673	I	-13,317	-10,144	-3583	I	-13,727	do do	N		494.3	

Note - Make both trusses alike

Widen to 24" on outside of base.

SUSPENDED SPAN

Member	Temp T	Wind W	W+Lat	Erection E	Erection Wind EW	North Truss Dead D	North Truss Live L	North Truss Case	North Truss Design Total	South Truss Dead D	South Truss Live L	South Truss Case	South Truss Design Total	Section	Material		Area Gross	Area Net
LS0-LS2	±400	±2246	±2995	-	±435	+2849	+1094	VI	+6661	+2689	+1193	VI	+6650	4∠ 8"-6"-¾", 2 Webs 48"-¾", 2 Webs 48"-¾", 2 Side Pls. 32"-¾"	N		218.6	180.1
LS2-LS4	±400	±2563	±3366	-	±230	+2840	+860	VI	+7046	+2680	+1156	VI	+7024	4∠ 8"-6"-¾", 4 Webs 48"-¾", 2 Side Pls. 32"-¾"	N		224.6	165.0
LS4-LS6	±400	±2819	±3707			+4881	+1458	VI	+9732	+4684	+1966	VI	+9594	8 Bars 12"-1⅝", 4 Bars 12"-1½"	HT		255.0	255.0
LS0-MS1				-		-4026	-1266	I	-5294	-3802	[illegible]	I	[illegible]	4∠ 8"-6"-¾", 2 Webs 48"-¾", 2 Covs. 30"-⅝", 2 Webs 45"-¾"	N		193.7	
MS1-US2				-		-3665	-1147	I	-4512	-3483	-1531	I	-4990	4∠ 8"-6"-¾", 2 Webs 45"-¾", 2 Covs. 30"-¾", 2 Webs 45"-¾"	N		169.9	
US2-US6		±281	±396	+	±25	-4123	-1242	I	-5365	-3590	-1646	I	-5536	4∠ 8"-6"-¾", 4 Webs 45"-¾", 2 Covs 30"-¾"	N		195.9	
US0-US2				+	±203	0	0	IV	+	0	0	IV	+	4∠ 8"-6"-¾", 2 Webs 45"-¾"	S		114.2	93.7
US2-MS3				+		+2165	+758	I	+2923	+2042	+1006	I	+3048	4∠ 6"-6"-¾", 2 Webs 36"-¾", 2 Webs 36"-¾"	S		132.8	109.1
MS3-LS4				+		+1814	+702	I	+2516	+1711	+929	I	+2640	4∠ 6"-6"-¾", 2 Webs 36"-¾", 2 Webs 36"-¾"	S		117.5	94.4
LS4-MS5				-		-1072	[illegible]	I	-1620	-1010	[illegible]	I	-1733	4∠ 6"-6"-¾", 2 Webs 30"-¾"	S		84.8	
MS5-US6				-		-721	[illegible]	I	-1172	-680	[illegible]	I	-1274	4∠ 6"-6"-¾", 2 Webs 30"-¾"	S		68.0	
US0-LS0				-		-207	-56	IV	-	-207	-56	IV		4∠ 6"-4"-½", 2 Webs 26"-½"	C		42.7	
US4-LS4						-215	-56	I	-271	-215	-56	I	-271	do do	C		42.7	
US2-LS2						+931	+475	I	+1406	+873	+520	I	+1393	4∠ 6"-6"-⅜", 2 Webs 26"-⅜"	S		70.1	57.2
US6-LS6						+936	+475	I	+1411	+875	+520	I	+1398	do do	S		70.1	57.2
LS1-MS1						+387	+268	I	+655	+358	+331	I	+689	4∠ 8"-6"-½", 1 Web 32½"-½"	S		43.2	36.5
LS3-MS3						+388	+268	I	+656	+359	+331	I	+690	4∠ 8"-6"-½", 1 Web 32½"-½"	S		43.2	36.5
LS5-MS5						+399	+268	I	+667	+370	+331	I	+701	4∠ 8"-6"-½", 1 Web 32½"-½"	S		43.2	36.5
US1-MS1						-46	0	IV		-46	0	IV		2-⌶ 18" @ 42.7#	C		25.0	
US3-MS3						-55	0	IV		-56	0	IV		do	C		25.0	
US5-MS5						-57	0	IV		-57	0	IV		do	C		25.0	
MS1-LS2						-364	-189	I	-553	-343	-234	I	-577	4∠ 6"-4"-½", 2 Webs 24"-½"	C		43.0	
MS3-LS2						-351	-189	I	-540	-330	-234	I	-564	4∠ 6"-4"-½", 2 Webs 24"-½"	C		40.7	
MS5-LS6						-350	-189	I	-539	-330	-234	I	-564	do do	C		40.7	

BOTTOM LATERALS

ANCHOR ARM

Panel	Design Stress	Section	Mat'l	Area Gr.	Area Net
LO-LA1	-1035	4∠ 6"-4"-½", 2 Cov Pls 22"-⁵⁄₁₆, 1 Web 25"-⅜	S	60.7	
LA1-LA2	-1001	" " "	S	60.7	
LA2-LA3	-964	4∠ 6"-4"-⅜", 2 Cov Pls 22"-⁵⁄₁₆, 1 Web 25"-⅜	S	56.2	
LA3-LA4	-927	" " "	S	56.2	
LA4-LA5	-697	4∠ 6"-4"-⅜", 2 Cov Pls 18"-⁵⁄₁₆, 1 Web 25"-⅜	S	50.2	
LA5-LA6	-680	" " "	S	50.2	
LA6-LA7	-679	" " "	S	50.2	
LA7-LA8	-674	" " "	S	50.2	
LA8-LA9	-653	" " "	S	50.2	
LA9-LA10	-653	" " "	S	50.2	

CANTILEVER ARM

Panel	Design Stress	Section	Mat'l	Area Gr.	Area Net
LO-LC1	-1232	4∠ 6"-4"-½", 2 Cov Pls 22"-⁵⁄₁₆, 1 Web 25"-⅜	S	60.7	
LC1-LC2	-1184	" " "	S	60.7	
LC2-LC3	-1149	4∠ 6"-4"-⅜", 2 Cov Pls 22"-⁵⁄₁₆, 1 Web 25"-⅜	S	60.7	
LC3-LC4	-1087	" " "	S	60.7	
LC4-LC5	-742	4∠ 6"-4"-⅜", 2 Cov Pls 18"-⁵⁄₁₆, 1 Web 25"-⅜	S	50.2	
LC5-LC6	-719	" " "	S	50.2	
LC6-LC7	-686	" " "	S	50.2	
LC7-LS0	-641	" " "	S	50.2	

SUSPENDED SPAN

Panel	Design Stress	Section	Mat'l	Area Gr.	Area Net
LS0-LS1	±336	4∠ 6"-4"-½", 1 Web 24"-½"	S	35.0	29.7
LS1-LS2	[illegible]	" "	S	35.0	29.7
LS2-LS3	[illegible]	" "	S	35.0	29.7
LS3-LS4	[illegible]	" "	S	35.0	29.7
LS4-LS5	[illegible]	" "	S	35.0	29.7
LS5-LS6	[illegible]	" "	S	35.0	29.7

GENERAL NOTES

For Floor System Stresses and Design Data, Assumed Loadings and notes regarding loading combinations, abbreviations, etc., see Anchor Arm Stress Sheet, Sup. Drawing No. 4.

APPROVED: [signature] Director of Public Works

CORRECT: [signature] Engineer of Design

APPROVED: [signature] Bridge Engineer

BOARD OF CONSULTING ENGINEERS [signatures]

Revised June 12, 1934 (Stresses and Sections)
Revised Nov. 28 1933
Revised Sept. 15, 1933
Revised Oct. 16, 1933

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

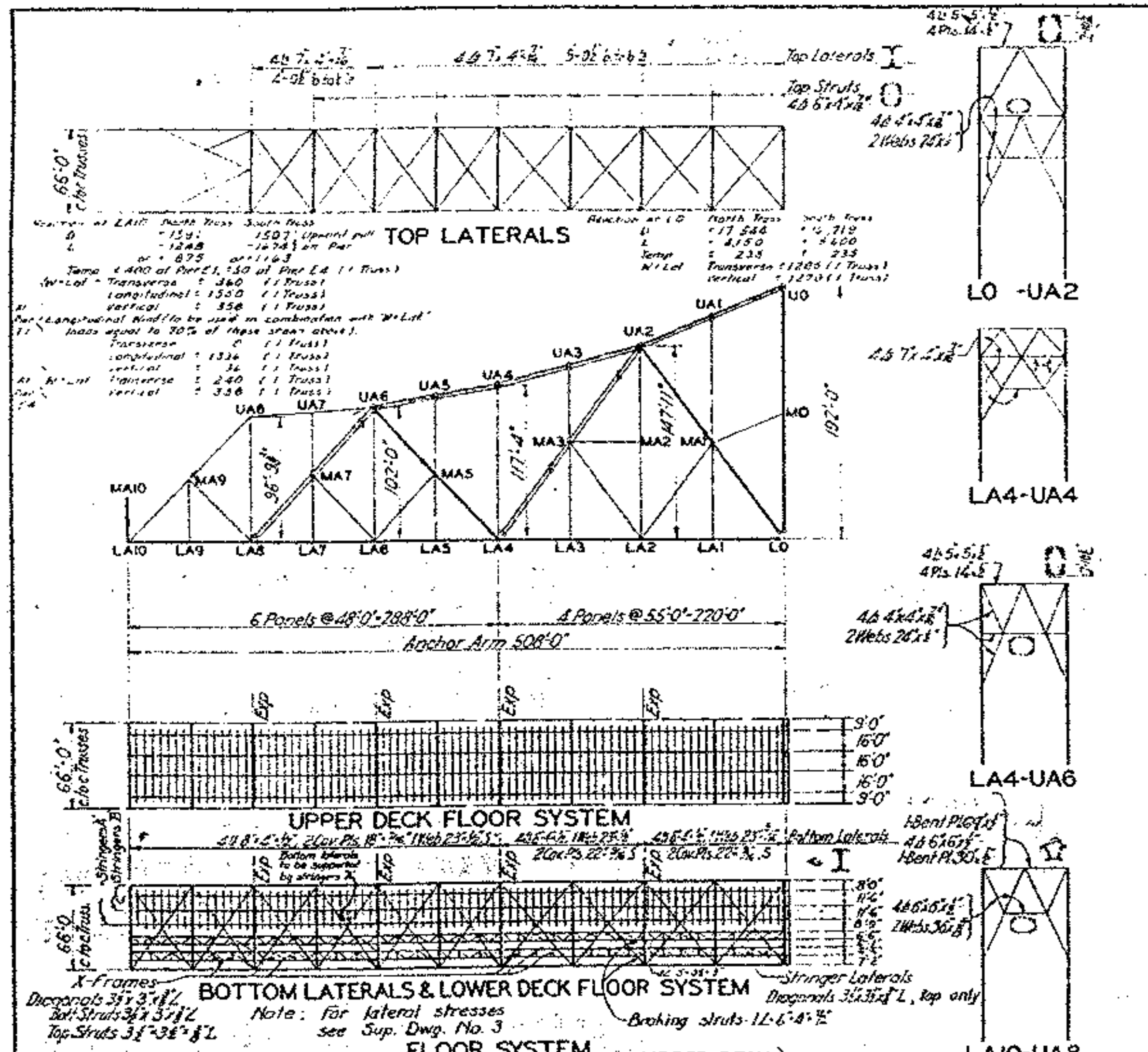
SUPERSTRUCTURE-EAST BAY CROSSING

STRESS SHEET

CANTILEVER ARM AND SUSPENDED SPAN

CONTRACT NO. 7 SUP. DRAWING NO. 3

JUNE, 1933



ANCHOR ARM

Member	Stresses – North & South Trusses – Temp T	Wind W	W+Lat	Erection E	Erection Wind EW	North Truss – Dead D	Live L	Design Case	Total	South Truss – Dead D	Live L	Design Case	Total	Design of Member – Section	Material		Area Gross	Area Net
L0-LA2	±400	±3589	±4670	-7393	±2162	-10295	-3369	V	-17046	-9742	-4518	VI	-17071	4∠ 8"×8"×1", 6 Webs 45"×1", 2 Covs 28"×1", 2 Webs 45"×1", 2 Webs 32"×1"	N		526.0	
LA2-LA4	±400	±2794	±3670	-7433	±2254	-10326	-3369	VI	-16071	-9777	-4518	V	-16550	4∠ 8"×8"×1", 8 Webs 46"×1", 2 Webs 32"×1", 2 Covs 28"×1"	N		516.0	
LA4-LA6	±400	±1978	±2681	-3603	±1600	-4666	-2356	VI	-8545	-4426	-3158	V	-9324	4∠ 8"×8"×1", 6 Webs 48"×¾", 2 Covs 29"×⅝", 2 Webs 32"×¾"	S		349.6	
LA6-LA8	±400	±1472	±1963	-3684	±1555	-4726	-2356	V	-8466	-4471	-3158	V	-9011	4∠ 8"×8"×⅞", 2 Webs 48"×⅝", 4 Webs 45"×¾", 2 Covs 29"×⅝", 2 Webs 32"×¾"	S		323.6	
LA8-LA10	±400	±691	±1953	-1609	±532	-1845	+790 / -1242	V	-4619	-1726	+1046 / -1665	V	-4912	4∠ 8"×8"×⅝", 4 Webs 48"×⅝", 2 Cov. Pls. 30"×½"	S		188.4	
U0-UA2				+9376	±572	+13366	+3563	I	+16929	+12674	+4778	I	+17452	16 Bars 16"×2"	H.T.		512.0	512.0
UA2-UA4				+6073	±511	+8228	+3186	I	+11414	+7786	+4272	I	+12058	8 Bars 16"×1¾", 4 bars 16"×1⅞"	H.T.		356.0	356.0
UA4-UA6				+5926	±500	+8028	+3109	I	+11137	+7592	+4166	I	+11758	12 Bars 14"×2¼"	H.T.		346.5	346.5
UA6-UA8				+1721	±209	+2365	[illegible]	I	+5327	+1971	[illegible]	I	+5637	4∠ 8"×6"×⅞", 2 Webs 48"×⅞", 2 Webs 32"×⅝"	S		155.8	130.5
L0-MA1				-2199		-3543	-972	I	-4515	-3381	-1293	I	-4674	4∠ 8"×8"×⅞", 2 Webs 48"×¾", 2 Webs 48"×⅝", 2 Cov. Pls. 29"×⅝"	S		214.0	
MA1-UA2				-1856		-3032	-855	I	-3887	-2891	-1136	I	-4027	4∠ 8"×8"×¾", 2 Webs 48"×⅝", 2 Webs 48"×9⁄16", 2 Cov. Pls. 29"×⅝"	S		188.7	
UA2-MA3				-2926		+4477	+1222	I	+5699	+4260	+1634	I	+5894	8 Bars 12"×1⅝"	H.T.		174.0	174.0
MA3-LA4				+2650		+4021	+1140	I	+5161	+3832	+1519	I	[illegible]	4 Bars 12"×1⅝", 4 Bars 12"×1⅝"	H.T.		159.0	159.0
LA4-MA5				-3283		-4739	-1439	I	-6178	-4492	-1935	I	-6427	4∠ 8"×8"×¾", 2 Webs 48"×¾", 2 Cov. Pls. 28"×¾", 4 Webs 48"×9⁄16"	S		251.8	
MA5-UA6				-2837		-4316	-1326	I	-5642	-4089	-1788	I	-5877	4∠ 8"×8"×¾", 2 Webs 48"×⅞", 2 Webs 48"×⅝", 2 Webs 32"×⅝", 2 Cov. Pls. 29"×9⁄16"	S		251.9	
UA6-MA7				+3076		+4222	+1683	I	+5905	+3993	+2260	I	+6253	8 Bars 12"×1⅞"	H.T.		186.0	186.0
MA7-LA8				+2868		+3860	+1677	I	+5537	+3648	+2247	I	+5895	8 Bars 12"×1¹³⁄₁₆"	H.T.		174.0	174.0
UA8-MA9				+2449		+2960	-999 / +1763	I	+4723	+2796	-1329 / +2363	I	+5159	4∠ 8"×6"×⅝", 2 Webs 48"×¾", 2 Webs 32"×⅝", 2 Cov. Pls. 48"×¾"	S		217.4	184.3
MA9-LA10				+2285		+2631	-1117 / +1763	I	+4394	+2466	-1485 / +2363	I	+4829	do do	S		217.4	184.3
UA2-LA2						+1332	+540	I	+1872	+1264	+595	I	+1859	4∠ 8"×6"×⅝", 2 Webs 32"×¾"	S		87.8	75.4
UA4-LA4				-237		+800	[illegible]	I	+1165	+748	[illegible]	I	+1238	4∠ 6"×4"×⅝", 2 Webs 27"×¾"	S		65.9	[illegible]
*UA6-LA6						+1053	+475	I	+1518	+985	+520	I	+1505	4∠ 8"×8"×9⁄16", 4 Webs 32"×¾"	S		138.1	[illegible]
UA8-LA8						-2247	[illegible]	I	-3427	-2135	[illegible]	I	-3718	[illegible]	S		167.3	
MA1-LA1						+513	+305	I	+818	+479	+359	I	+838	4∠ 8"×6"×⅝", 1 Web 31½"×⅝"	S		49.2	41.2
*MA3-LA3						+517	+305	I	+822	+483	+359	I	+842	4∠ 6"×4"×7⁄16", 2 Webs 27"×⅝"	S		50.5	
MA5-LA5						+404	+268	I	+672	+375	+331	I	+706	4∠ 8"×6"×½", 1 Web 32½"×½"	S		43.2	36.5
MA7-LA7						+401	+268	I	+669	+372	+331	I	+703	do do	S		43.2	36.5
MA9-LA9						+377	+268	I	+645	+348	+331	I	+697	do do	S		43.2	36.5
*UA1-MA1				-292		-169	0	IV		-169	0	IV		4∠ 6"×6"×½", 2 Webs 27"×⅝"	S		71.6	
UA3-MA3				-235		-113	0	IV		-113	0	IV		4∠ 6"×4"×7⁄16", 2 Webs 27"×⅝"	C		50.5	
UA5-MA5				-223		-106	0	IV		-106	0	IV		do do	C		50.5	
UA7-MA7				-190		-58	0	IV		-58	0	IV		2-18" ⌶ @ 42.7#	C		25.0	
*MA1-LA2						-510	-190	I	-700	-489	-223	I	-712	4∠ 8"×8"×9⁄16", 2 Webs 30"×⅝"	S		87.1	
MA3-LA2						-456	-190	I	-646	-434	-223	I	-657	4∠ 6"×4"×½", 2 Webs 30"×⅝"	C		54.2	
MA5-LA6						-423	-184	I	-607	-403	-227	I	-630	4∠ 6"×4"×½", 2 Webs 24"×½"	S		43.0	
MA7-LA6						-363	-184	I	-547	-342	-227	I	-569	do do	C		43.0	
MA9-LA8						-330	-189	I	-519	-310	-233	I	-543	4∠ 6"×4"×½", 2 Webs 24"×½"	C		40.7	
MA10-LA10						-140	-56	I	-196	-140	-56	I	-196	2-15" ⌶ 42.7#	C		25.0	
[illegible]-A10				+750		0	0	IV		0	0	IV		4∠ 6"×4"×⅞", 2 Webs 24"×½"	C		43.0	34.5
MA3-MA2						0	0		0	0	0		0	2-18" ⌶ 42.7#	C		25.0	

Note - Make both trusses alike

* Section increased for erection purposes.

FLOOR SYSTEM

LOWER DECK Member	Load	Shear	Moment	Material	UPPER DECK Member	Load	Shear	Moment	Material
Joists	D / L / Total	4 / 55 / 59	4 / 75 / 79	12" ⌶ 31.8# S. @ 6'-0" ctrs. about	Joists	D / L / Total	4 / 24 / 28	7 / 62 / 69	12" ⌶ 31.8# S. @ 6'-0" ctrs. about
48 FOOT PANELS									
Roadway Stringers "A"	D / L / Total	38 / 83 / 121	501 / 894 / 1395	1-Web 48"×⅜" S. 4∠ 6"×4"×⅜" S.	Roadway Stringers	D / L / Total	27 / 46 / 73	326 / 487 / 813	33" C.B. @ 125# S.
Roadway Stringers "B"	D / L / Total	27 / 91 / 118	318 / 978 / 1296	1-Web 48"×⅜" S. 4∠ 6"×4"×⅜" S.					
Railroad Stringers	D / L / Total	10 / 57 / 67	115 / 503 / 618	1-Web 48"×⅜" C. 4∠ 6"×3½"×½" C.					
Floor Beams	D / L / Total	170 / 213 / 383	2904 / 3971 / 6875	1-Web 84"×⅜" S. 4∠ 6"×6"×⅝" S. 2 Covs. 16"×⅝"×54'0" S. 2 Covs 16"×½"×36'0" S.	Floor Beams	D / L / Total	119 / 55 / 174	2007 / 957 / 2964	1 Web 67"×½" S. 4∠ 6"×4"×⅝" S. 2 Covs 14"×⅝"×43'0" S.
55 FOOT PANELS									
Roadway Stringers "A"	D / L / Total	48 / 90 / 138	719 / 1040 / 1819	1-Web 48"×⅜" S. 4∠ 6"×6"×⅜" S.	Roadway Stringers	D / L / Total	31 / 50 / 81	432 / 568 / 1000	36" C.B. @ 150# S.
Roadway Stringers "B"	D / L / Total	30 / 99 / 129	419 / 1140 / 1559	1-Web 48"×⅜" S. 4∠ 6"×6"×⅜" S.					
Railroad Stringers	D / L / Total	12 / 61 / 73	155 / 653 / 808	1 Web 48"×⅜" S. 4∠ 5"×3½"×½" S.					
Floor Beams	D / L / Total	198 / 242 / 440	3444 / 4499 / 7943	1-Web 86"×⅜" S. 4∠ 6"×6"×⅝" S. 2 Cov. 16"×⅝"×54'0" S. 2 Cov. 16"×⅝"×28'0" S.	Floor Beams	D / L / Total	138 / 63 / 201	2327 / 1089 / 3436	1-Web 67"×½" S. 4∠ 6"×4"×⅝" S. 2 Covs 14"×⅝"×43'0" S.
PANEL POINTS LA4 & LC4									
Floor Beams	D / L / Total	185 / 229 / 414	3192 / 4260 / 7452	1-Web 86"×⅜" S. 4∠ 6"×6"×⅝" S. 2 Covs 16"×⅝"×54'0" S. 2 Covs 16"×½"×36'0" S.	Floor Beams	D / L / Total	130 / 59 / 189	2211 / 1026 / 3237	1-Web 67"×½" S. 4∠ 6"×4"×½" S. 2 Covs 14"×½"×43'0" S.
PANEL POINT L0									
Floor Beams	D / L / Total			2 Webs [illegible] 8∠ 6"×6"×⅝" S. 4 Covs 14"×⅝" S.	Floor Beams	D / L / Total			2 Webs 67"×½" S. 4∠ 6"×6"×⅝" S.

GENERAL NOTES

Dead Load - Upper deck floor slab 60 lbs per sq ft.
Lower deck floor slab 50 lbs per sq ft.
Both tracks complete 900 lbs. per lin ft.
Utilities 300 lbs per lin ft of Bridge ⅔ on North Truss
Excess 500 lbs per lin ft each truss.

Live Load - Upper deck floor system.
Stringers - 13½ ton truck trains
Floor Beams - 2 outside lanes 13½ ton truck trains, 4 inside lanes 10 ton truck trains. Multiply Stresses by factor $C = 0.5 + \frac{1}{n-2}$ (?)
n = number of loaded lanes.

Lower deck floor system
Stringers and Floor Beams 40 ton truck trains on roadway lanes and 90 ton car trains on tracks. For members receiving stress from both roadway and tracks multiply stress by C = .85

Trusses - Use equivalent loading
For members receiving stress from all lanes loaded use for:
North truss -
Upper Deck - 620# per lin ft and concentrations of 20000# for Moment & 27000# for Shear
Lower Deck - 2340# - - - 55000# - - 96000# -
Total 2960# - - - 75000# - - 123000# -
South Truss -
Upper Deck - 600# per lin ft and concentrations of 20000# for Moment & 27000# for Shear
Lower Deck - 3440# - - - 51000# - - 100000# -
Total 4045# - - - 71000# - - 127000# -
Sidewalk - For sidewalk and sidewalk supports 100# per sq ft; neglect sidewalk load on trusses.

Impact - Included in live load allowances

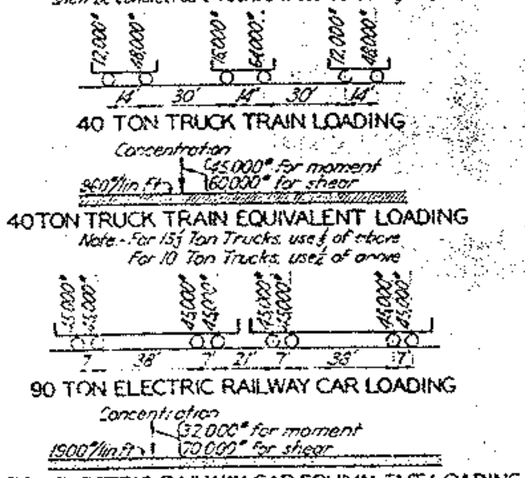
Lateral Loads:
a. Wind a moving horizontal load of 30# per sq ft on 1½ times the area of the structure as seen in elevation
b. Lateral force a moving load of 200# per lin ft on upper deck and 300 lbs. per lin ft on lower deck, acting 6' above roadway.

Erection Wind: A moving horizontal load 15 lbs per sq ft on 1½ times area of the structure and all erection equipment as seen in elevation.

Temperature - Provision shall be made for a variation of temperature of ±30° F.

Erection Loads - Dead load of all material in place plus 500# per lin ft of Bridge plus 180 ton traveler applied 120,000# per truss at front panel and 60,000# per truss at rear panel

Alternate Stresses - If alternate stresses occur during one passage of live load each shall be increased by ½ the smaller. 70% of dead load shall be considered effective in counteracting live load stress



ABBREVIATIONS

Stresses.
+ denotes tension
− " compression
D " dead load stress
L " live load stress
W " wind stress (wind on steelwork)
Lat " lateral load stress (wind on live loading)
E " erection stress
EW " erection wind stress
T " temperature stress
Eq " Earthquake stress

Material
N denotes nickel steel
S " silicon steel
C " carbon steel
HT " heat treated carbon steel eye-bars.
Note - Material not otherwise designated to be carbon steel

Note - Tension, Compression and shear are expressed in thousands of pounds, moments in thousands of foot pounds

LOADING COMBINATIONS

Case I - D + L + T
Case II - D + W + T
Case III - W + Lat
Case IV - E
} Use basic unit stresses

Case V - D + L + T + ½(W + Lat)
Case VI - D + ½L + T + (W + Lat)
Case VII - E + EW
} Use basic unit stresses increased by 25%

Case VIII - D + L + T + Eq. Use basic unit stresses increased by 40%

Revised July 9, 1934
Revised Feb. 20, 1934
Revised Nov. 28, 1933
Revised Sept. 18, 1933
Revised Oct. 16, 1933
Revised

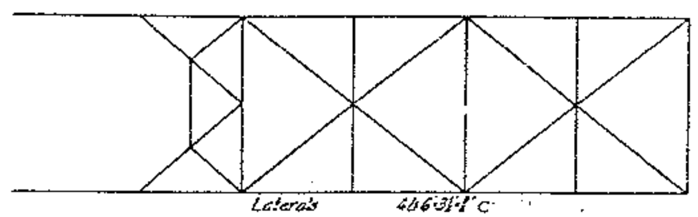
APPROVED: Director of Public Works
CORRECT: Chief Engineer
APPROVED: Bridge Engineer
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
STRESS SHEET
ANCHOR ARM

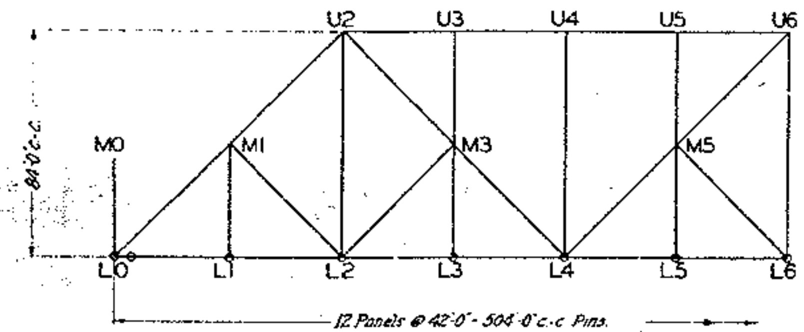
SCALE IN FEET

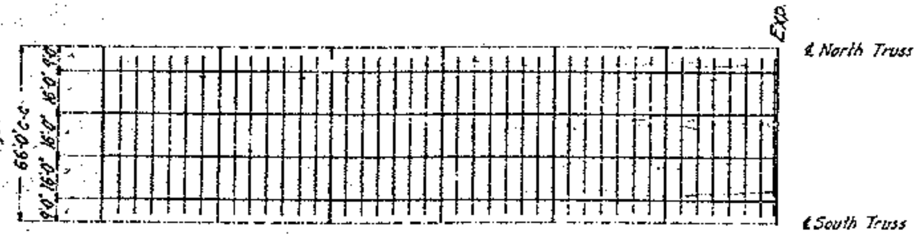
CONTRACT NO. 7 SUP. DRAWING NO. 4

JUNE - 1933

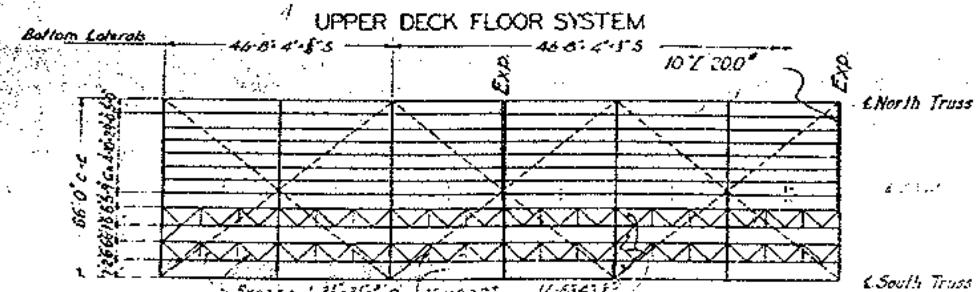


TOP LATERALS

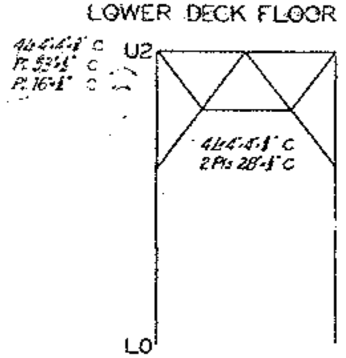




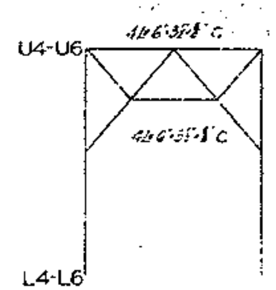
UPPER DECK FLOOR SYSTEM



LOWER DECK FLOOR SYSTEM & BOTTOM LATERALS



PORTAL



SWAY FRAME

MEM'R	DEAD LOAD NORTH TRUSS	DEAD LOAD SOUTH TRUSS	LIVE LOAD NORTH TRUSS	LIVE LOAD SOUTH TRUSS	T	W + LAT	DESIGN STR NORTH TRUSS	DESIGN STR SOUTH TRUSS	SECTION		AREA GROSS	AREA NET	MAT'L
*L0-L2	+2151	+2016	+791	+1059		+1410	+4210	+4264	4 bars 14"·2" for Span E8-E9		112.0	112.0	H.T.
	+2139	+2004	+737	+1059		+1302	+3896	+3686	4 bars 14"·1⅞" for Span E7-E8		105.0	105.0	H.T.
	+2132	+1997	+397	+1059	50	+994	+3575	+3603	4 bars 14"·1¾" for Span E4 to E7		98.0	98.0	H.T.
*L2-L4	+2158	+2024	+783	+1022		+1643	+4242	+4220	4 bars 14"·2" for Span E8-E9		112.0	112.0	H.T.
	+2146	+2012	+783	+1022		+1335	+3922	+3940	4 bars 14"·1⅞" for Span E7-E8		105.0	105.0	H.T.
	+2139	+2005	+783	+1022	50	+1027	+3607	+3593	4 bars 14"·1¾" for Spans E4 to E7		98.0	98.0	H.T.
*L4-L6	+3737	+3505	+1319	+1736		+1796	+6243	+6219	6 bars 14"·2" for Span E8-E9		168.0	168.0	H.T.
	+3717	+3485	+1319	+1736		+1488	+5915	+6015	6 bars 14"·1⅞" for Span E7-E8		162.75	162.75	H.T.
	+3707	+3475	+1319	+1736	50	+1180	+5644	+5851	6 bars 14"·1¾" for Spans E4 to E7		157.5	157.5	H.T.
L0-M1	-3015	-2824	-1127	-1499			-4142	-4323	4∠8·6·⅞	4 Web Pls 42·⅝; 2 Cov Pl 40·⅝	203.4		S
M1-U2	-2754	-2582	-1024	-1361			-3778	-3943	4∠8·6·⅝	4 Web Pls 42·⅝; 2 Cov Pl 40·⅝	192.9		S
U2-U4	-3119	-2924	-1100	-1452			-4219	-4376	Do	Do	192.9		S
U4-U6	-3119	-2924	-1100	-1452			-4219	-4376	Do	Do	192.9		S
U2-M3	+1656	+1553	+678	+897			+2334	+2450	4∠8·6·⅝; 2 Web Pls 36·⅝	2 Side Pls 20·⅝	107.9	90.2	S
M3-L4	+1386	+1300	+628	+828			+2014	+2128	4∠8·6·⅝	2 Web Pls 36·⅝	93.8	78.8	S
L4-M5	-8[illegible]	-779	-492	-646			-1323	-1425	4∠6·6·⅝	2 Web Pls 30·⅝	78.8		S
M5-U6	-560	-525	+199 / -404	+257 / -529			-964	-1054	4∠6·6·½	2 Web Pls 30·[illegible]	64.3	64.3	S
M1-L1	+300	+274	+247	+307			+547	+581	4∠6·6·½	1 Web Pl 22·½	34.0	28.1	S
M3-L3	+301	+277	+247	+307			+548	+584	Do	Do	34.0	28.1	S
M5-L5	+312	+288	+247	+307			+559	+595	Do	Do	34.0	28.1	S
U2-L2	+700	+651	+419	+457			+1119	+1108	4∠6·4·⅝	2 Web Pls 26·⅝	53.7	43.7	S
U4-L4	-176	-176	-52	-52			-228	-228	4∠6·4·½	2 Web Pls 26·½	42.7		C
U6-L6	+724	+674	+419	+457			+1143	+1131	4∠6·4·⅝	2 Web Pls 26·⅝	53.7	43.7	S
M3-U3	-48	-48					-48	-48	2-15⌷@33.9#		19.8		C
M5-U5	-48	-48					-48	-48	Do		19.8		C
M1-L2	-260	-242	-175	-217			-435	-459	4∠6·4·½	2 Web Pls 24·½	40.7		C
L2-M3	-270	-253	-175	-217			-445	-470	Do	Do	40.7		C
M5-L6	-271	-256	-175	-217			-446	-475	Do	Do	40.7		C
L0-M0	-68	-68	-52	-52			-120	-120	2-18⌷@47.7#		25.0		C

Note - Make both trusses alike.

*Lower Chords are designed for loading combinations involving "W + Lat." stresses. (See Sup. Dwg. No. 4.)

157.5

53.7

43.7

BOTTOM LATERALS					
PANEL	DES'N STR	SECTION	AREA GROSS	AREA NET	MAT'L
L0-L1	+675	4∠8·4·⅝	28.44	22.8	S
L1-L2	+630	do.	28.44	22.8	S
L2-L3	+521	4∠8·4·½	23.0	18.5	S
L3-L4	+478	do.	23.0	18.5	S
L4-L5	+470	do.	23.0	18.5	S
L5-L6	+438	do.	23.0	18.5	S

FLOOR SYSTEMS

LOWER DECK

Railroad Stringers

	Moment		Shear
D.	82	D.	8
L.	412	L.	54
T.	494	T.	62

33" C.B. 88.8# C

Roadway Stringers

	Moment		Shear
D	117	D	12
L	353	L	45
T.	470	T.	56

27" CB 85# S

Floorbeams

	Moment		Shear
D.	2456	D	150
L	3627	L	191
T.	6083	T.	341

Web Pl 66·½; 4∠ 6·6·⅝; 2 Cov Pl 14·⅝·46·0; 2 Cov Pl 14·⅝·31·0 — S

Web Pl 66·½; 4∠ 6·6·⅝; 2 Cov. Pls 14·⅝·54·0; 2 Cov Pls 14·⅝·36·0 — S at E9

UPPER DECK

Joists:

	Moment		Shear
D.	7	D.	5
L.	62	L.	23
T.	69	T.	28

12" I @ 31.8# S

Stringers:

	Moment		Shear
D	242	D.	23
L.	419	L.	43
T.	661	T.	66

30" S.B. @ 108# ~~S~~ 30" S.B. @ 108# S outside stringers
30" BB 116# S for interior stringers

Floorbeams:

	Moment		Shear
D.	1772	D.	105
L.	856	L.	49
T.	2628	T.	154

Web Pl. 67·½; 4∠ 6·4·⅝; 2 Cov Pls 14·½·40·0 — S

Web Pl. 67·½; 4∠ 6·4·⅝; 2 Cov. Pls. 14·⅝·43·0 — S at E9

GENERAL NOTES

For Design Data, Assumed Loading and more complete notes regarding loading combinations, abbreviations etc. see sup. Drawing No. 4

+ Denotes tension.
− " compression.

S - Silicon Steel.
C - Carbon Steel.
HT - Heat Treated Carbon Steel Eye-Bars.
Material not otherwise designated to be Carbon Steel.

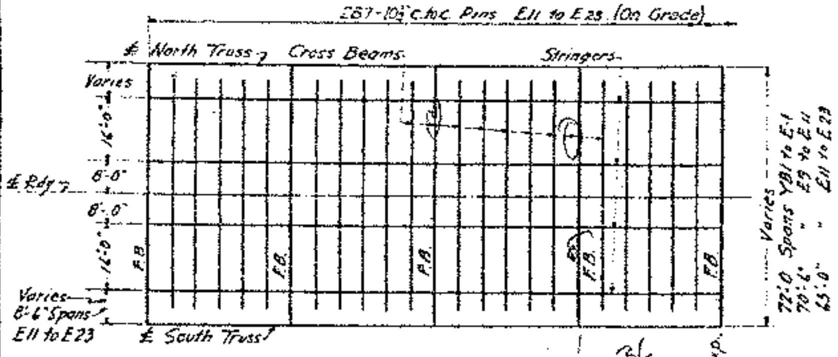
Revised August 11, 1933.
Revised August 29, 1933
Revised October 16, 1933
Revised January 11 1934
Revised December 6 1933
Revised: October 23 1933

APPROVED: [signature] Director of Public Works
CORRECT: [signature]
APPROVED: [signatures]
BOARD OF CONSULTING ENGINEERS

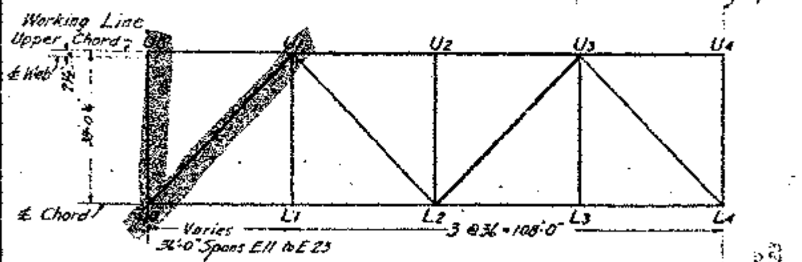
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
STRESS SHEET
504-FT. SPANS

SCALE IN FEET

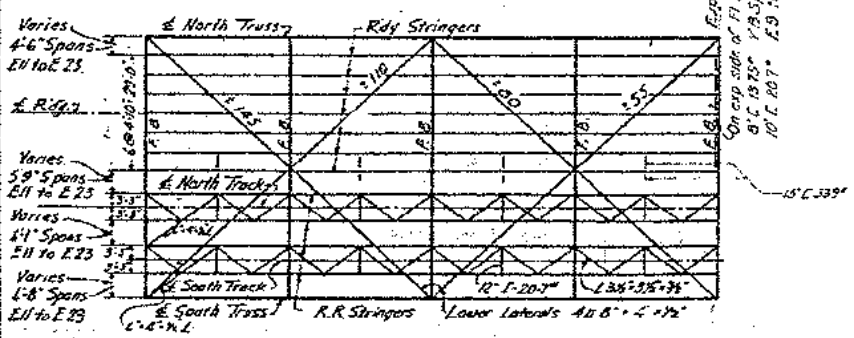
CONTRACT NO. 7 SUP. DRAWING NO. 5
JULY 1933



HALF PLAN UPPER DECK



HALF ELEVATION OF TRUSS



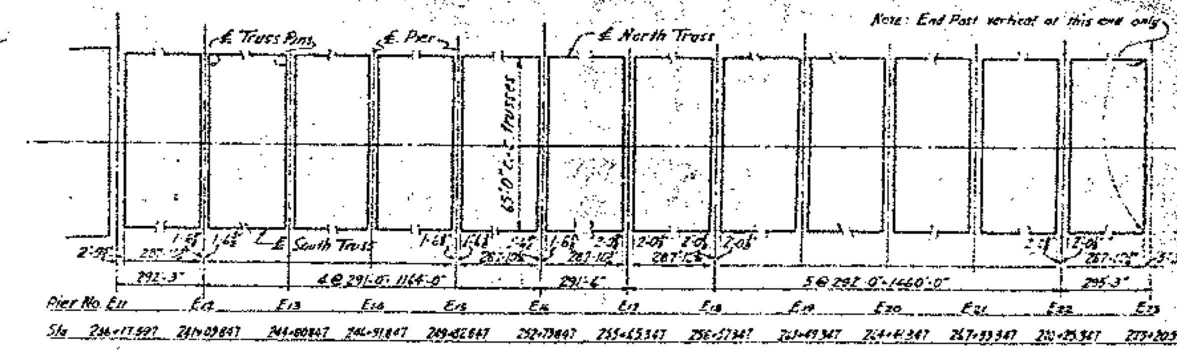
HALF PLAN-LOWER DECK & LOWER LATERALS

STRESS TABLES

Table No	Member	D N.Tens	D S.Tens	L N.Tens	L S.Tens	Both Trusses T	Both Trusses W.Lat.	Design Stress N.Tens	Design Stress S.Tens	Material	[redacted] Gross	Net	Allow
[redacted]	L0 L2	+970	+895	+454	+594	±30	±351	+2102	+2303	2 Web Pls 34"×3/4" 4 Ls 6"×6"×3/4" Spans E11–E17	848	712	S
		+910	+895	+454	+594	±30	±434	+1621	+1735	2 Web Pls 34"×3/4" 4 Ls 6"×6"×3/4" Spans E11–E14 & E17–E23	848	712	C
	L2 L4	+2084	+1924	+895	+1156	±30	±920	+3481	+3570	4 Web Pls 34"×3/4", 4 Ls 6"×6"×3/4"	1358	1155	S
	U1 U3	-1665	-1537	-714	-925			-2381	-2462	2 Web Pls 34"×3/4" 1 C.Pl. 34"×3/4", 2 Ls 6×6×3/4, 2 Ls 6×6×3/4	1069		S
	U3 U4	-2223	-2053	-954	-1233			-3177	-3286	2 Web Pls 34"×3/4" 1 C.Pl. 34"×3/4", 4 Ls 6×6×3/4	1435		S
	[redacted]	[redacted]	302	-640	-844			-2071	-2166	2 Web Pls 34"×3/4" 4 Ls 6×6×3/4	959		S
	U1 L2	-1012	-935	-505	-654			-1515	-1589	2 Web Pls 32"×3/4" 4 Ls 8×6×3/4	676	743	C
	L2 U3	-610	-563	-369	-476			-979	-1041	2 Web Pls 26"×3/4" 4 Ls 6×6×3/4	609		C
	U3 L4	-202	±187	[illegible]	[illegible]			[illegible]	[illegible]	2 Web Pls 22"×1/2" 4 Ls 6×6×1/2 E11 to E23 †	352	[illegible]	C
	[redacted]	[redacted]	60	-44	-44			-106	-106	1 Web Pl. 19"×3/4" 4 Ls 8×3×3/4	355		C
	[redacted]	-130	-130	-48	-48			-178	-178	do	355		C
	U4 L4	-135	-135	-48	-48			-183	-183	do	355		C
	U1 L1	+167	+144	+181	+234			+348	+378	do	355	289	S
	U3 L3	+176	+153	+181	+234			+357	+387	do	355	289	S
	U U									2 Web Pls. 34"×7/16", 1 C Pl 34"×7/16" 4 Ls 6×4×7/16	622		C
[redacted]	L0 L2	+1160		+507		±10	±169	+1667		2 Web Pls 34"×3/4" 4 Ls 8"×6"×3/4"	908	778	C
	L2 L4	+2350		+1030		±10	±342	+3360		4 Web Pls 34"×3/4" 4 Ls 8"×6"×3/4"	1416	1215	S
	U1 U3	-1690		-801				-2491		2 Web Pls 34"×3/4" 1 C.Pl. 34"×3/4" 2 Ls 6×6×3/4 2 Ls 6×6×3/4	1166		S
	U3 U4	-2500		-1072				-3572		2 Web Pls 34"×3/4" 1 C.Pl. 34"×3/4", 4 Ls 6×6×3/4	1533		S
	[redacted]	[redacted]		-721				-2311		4 Ls 8"×6"×3/4", 1 Web Pl 34"×3/4", 2 side Pls. 18"×3/4"	1033		S
[redacted]	L0 L2	+750	+675	+317	+416	±10	±169	+1057	+1101	2 Web Pls 34"×3/4" 4 Ls 6"×4"×3/4"	639	520	C
	L2 L4	+1890	+1750	+787	+1013	±10	±362	+2687	+2775	2 Web Pls 34"×7/16" 2 Web Pls 34"×3/4", 4 Ls 6×6×7/16	1204	1024	S
	U1 U3	-1450	-1350	-604	-775			-2054	-2125	2 Web Pls 34"×7/16" 1 C.Pl 34"×7/8", 2 Ls 6×6×7/8 2 Ls 6×6	975		S
	U3 U4	-2020	-1865	-845	-1088			-2865	-2973	2 Web Pls 34"×7/16" 2 Web Pls 34"×[illegible]	1265		S

†	2 Web Pls 22"×3/4" 4 Ls 4"×4"×3/4" E9 to E11	387	306	C
	2 Web Pls 22"×1/2" 4 Ls 4"×4"×1/2" YB Spans	370	294	S

NOTE:
[redacted] applies for North and South Trusses Spans E11 to E23 inc. South Truss YB2 to E1 and E9 to E11.
[redacted] applies for North Truss Spans YB2 to E1, E9 to E11.
[redacted] applies for North and South Truss Span YB1 to YB2.
Members not listed in Table II and Table III to be as listed in Table I
*Loading combination Case VI } See Sup. Dwg. No. 4
°Loading combination Case V }



LAYOUT SPANS [redacted]

For Layout Spans YB1 to E1 see Sup. Drwg. No. 79.
For Layout Spans E9 to E11 see Sup. Drwg. No. 78.
No Scale.

FLOOR SYSTEM

UPPER DECK

Cross Beams 12" I @ 31.8# S.
M. D. 7 — Sh. D. 3
L. 62 — L. 25
Total 69 — Total 28

Stringers 26' to 30' Span - 24" CB @ 71# S
M. D. 104 — Sh. D. 17
L. 250 — L. 41
Total 354 — Total 58

Stringers 30' to 37' Span - 27" CB @ 85# S
M. D. 198 — Sh. D. 21
L. 364 — L. 42
Total 562 — Total 63

Stringers 37' to 40' Span - 27" CB @ 106# S
M. D. 222 — Sh. D 22
L. 386 — L. 42
Total 608 — Total 64

Floor Beam 72'-0" c. to c. Trusses
1 Web Pl. 67"×7/16"
4 Ls 6"×4"×7/16"
2 C Pls. 14"×7/16" 44'-0" long } S.
M. D. 1800 — Sh. D. 89
L. 975 — L. 47
Total 2775 — Total 136

Floor Beams 70'-6" c. to c. Trusses
1 Web Pl. 67"×7/16"
4 Ls 6"×6"×3/4" } S.
M. D. 1733 — Sh. D. 88
L. 940 — L. 47
Total 2673 — Total 135

Floor Beam 65'-0" c. to c. Trusses
1 Web Pl. 67"×1/2"
4 Ls 6"×4"×3/4" } S.
M. D. 1472 — Sh. D. 86
L. 809 — L. 47
Total 2281 — Total 133

LOWER DECK

Rdy. Stringer 26' to 30' Span 21" CB @ 63# S.
M. D. 46 — Sh. D. 7
L. 208 — L. 42
Total 254 — Total 49

Rdy. Stringer 30' to 31' Span 24" CB @ 74# S.
M. D. 64 — Sh. D. 10
L. 302 — L. 45
Total 366 — Total 55

Rdy. Stringer 31' to 40' Span 24" CB @ 80# S.
M. D. 97 — Sh. D. 11
L. 324 — L. 44
Total 421 — Total 55

R.R. Stringers 26' to 30' Span 24" CB @ 80# C.
M. D. 26 — Sh. D. 4
L. 225 — L. 40
Total 251 — Total 44

R.R. Stringer 30' to 37' Span 30" CB @ 108# C.
M. D. 35 — Sh. D. 6
L. 334 — L. 46
Total 369 — Total 52

Floor Beam 72'-0" c. to c. Trusses
1 Web Pl. 80"×1/2"
4 Ls L×L×7/16"
2 C Pls. 14"×7/16" 56'-0" Long
2 C Pls. 14"×7/16" 45'-0" Long
2 C Pls. 14"×1/2" 34'-0" Long } S.
M. D. 2444 — Sh. D. 137
L. 3535 — L. 202
Total 6433 — Total 339

Floor Beam 70'-6" c. to c. Trusses
1 Web Pl. 80"×1/2"
4 Ls L×L×7/16"
2 C Pls. 14"×1/2" 58'-6" Long
2 C Pls. 14"×1/2" 48'-0" Long
2 C Pls. 14"×1/2" 36'-0" Long } S.
M. D. 2348 — D. 135
L. 3872 — 199
Total 6220 — Total 334

Floor Beam 65'-0" c. to c. Trusses
1 Web Pl. 80"×1/2"
4 Ls 6"×6"×7/16"
2 C Pls. 14"×7/16" 46'-0" Long
2 C Pls. 14"×7/16" 33'-0" Long } S.
M. D. 2040 — Sh. D. 125
L. 3340 — L. 183
Total 5380 — Total 308

For General Notes See Sup. Dwg No. 4

Revised Dec. 21 1933
Revised Oct 18 1933
Revised Oct. 23 1933

CORRECT:
APPROVED:
Bridge Engineer
Chief Engineer
Director of Public Works
Chairman

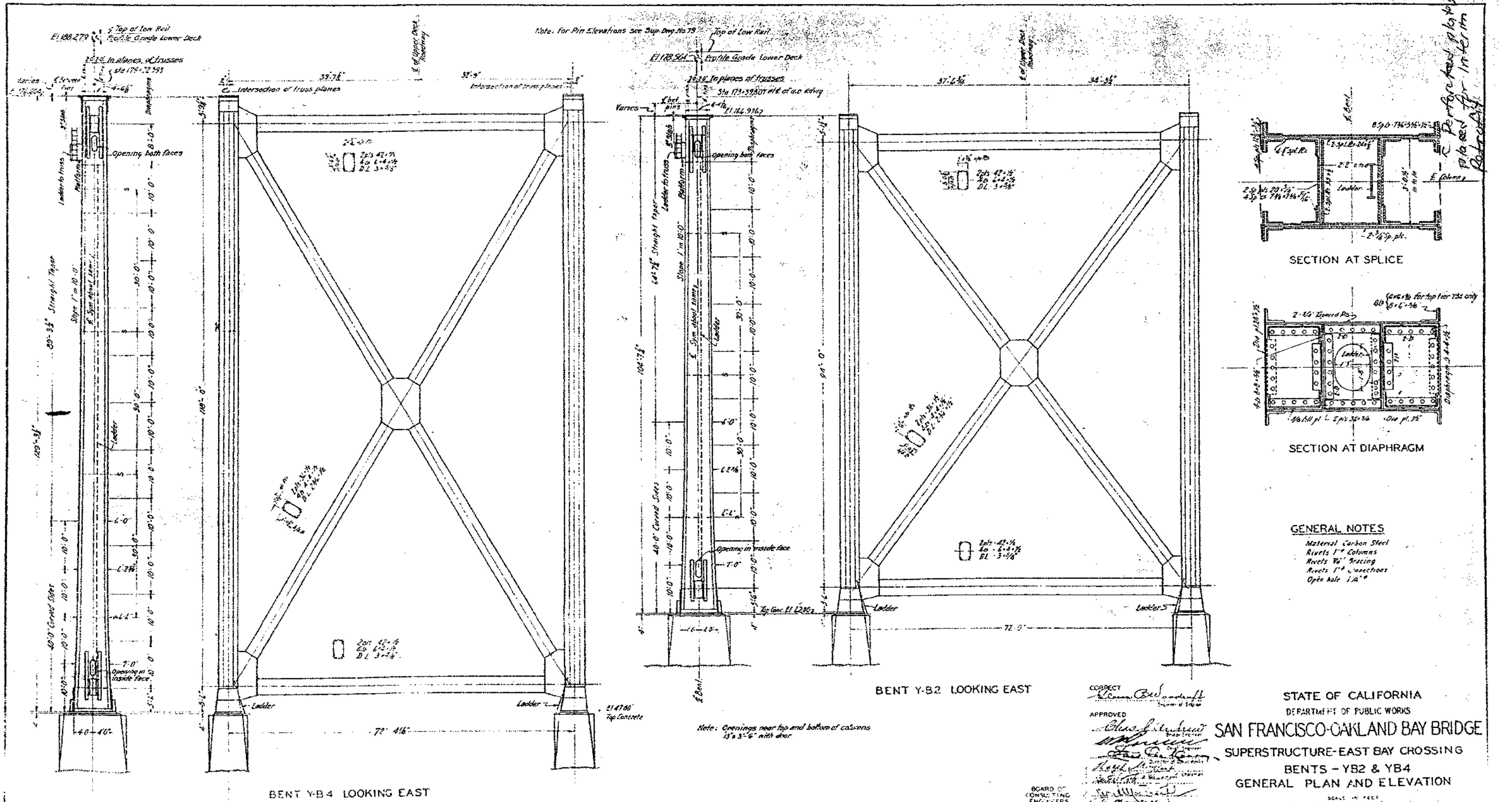
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
STRESS SHEET
[redacted]

SCALE IN FEET 10 0 10 20 30 40 50

CONTRACT NO 7. SUP. DRAWING NO. 6.

OCTOBER - 1933



CORRECT

APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

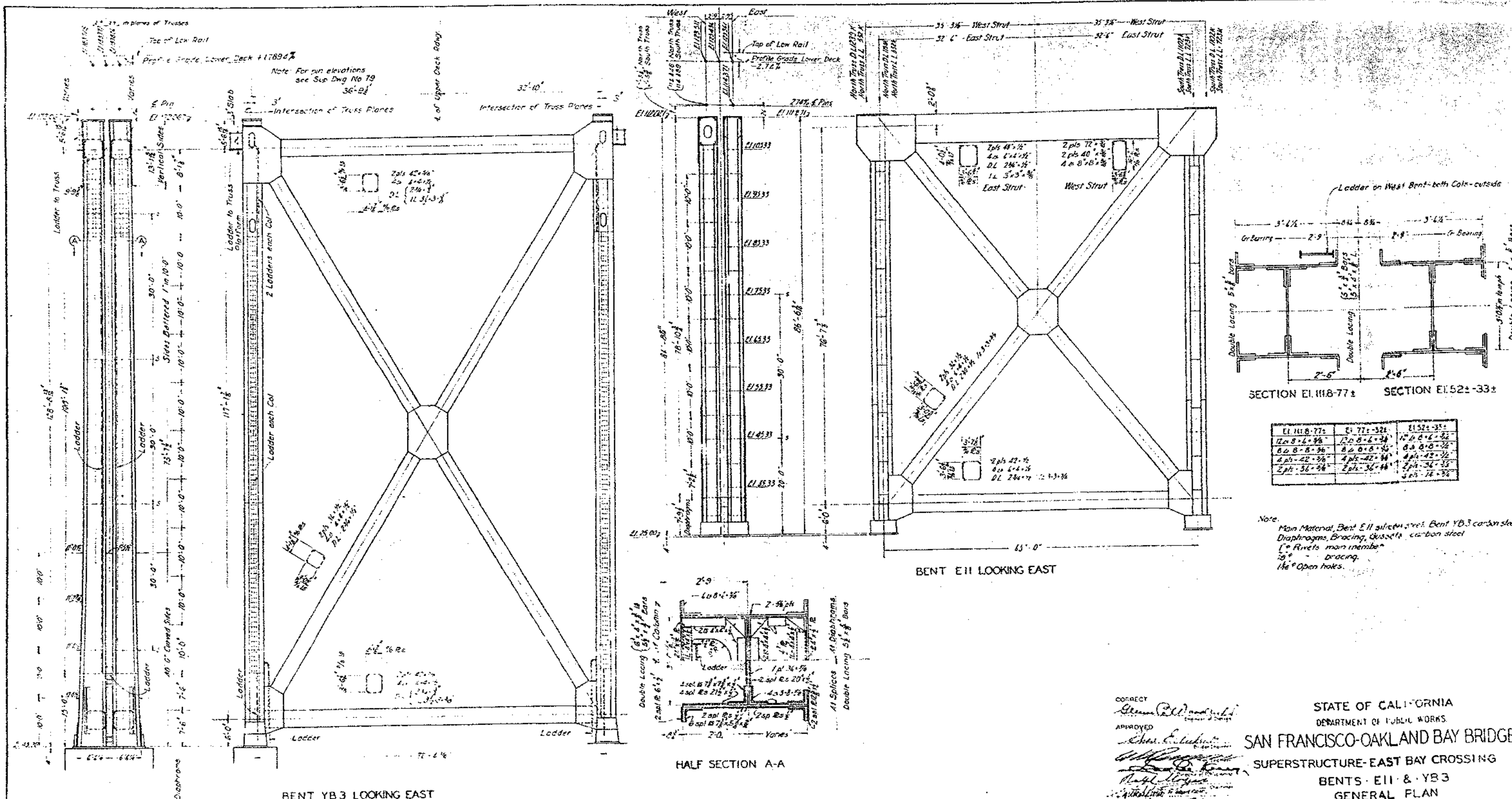
BENTS - YB2 & YB4

GENERAL PLAN AND ELEVATION

CONTRACT NO 7 SUP. DRAWING NO 7

AUGUST - 1933

11/5/37	As built Revisions	J.L.C.	
Date	Revisions	By	Chkd



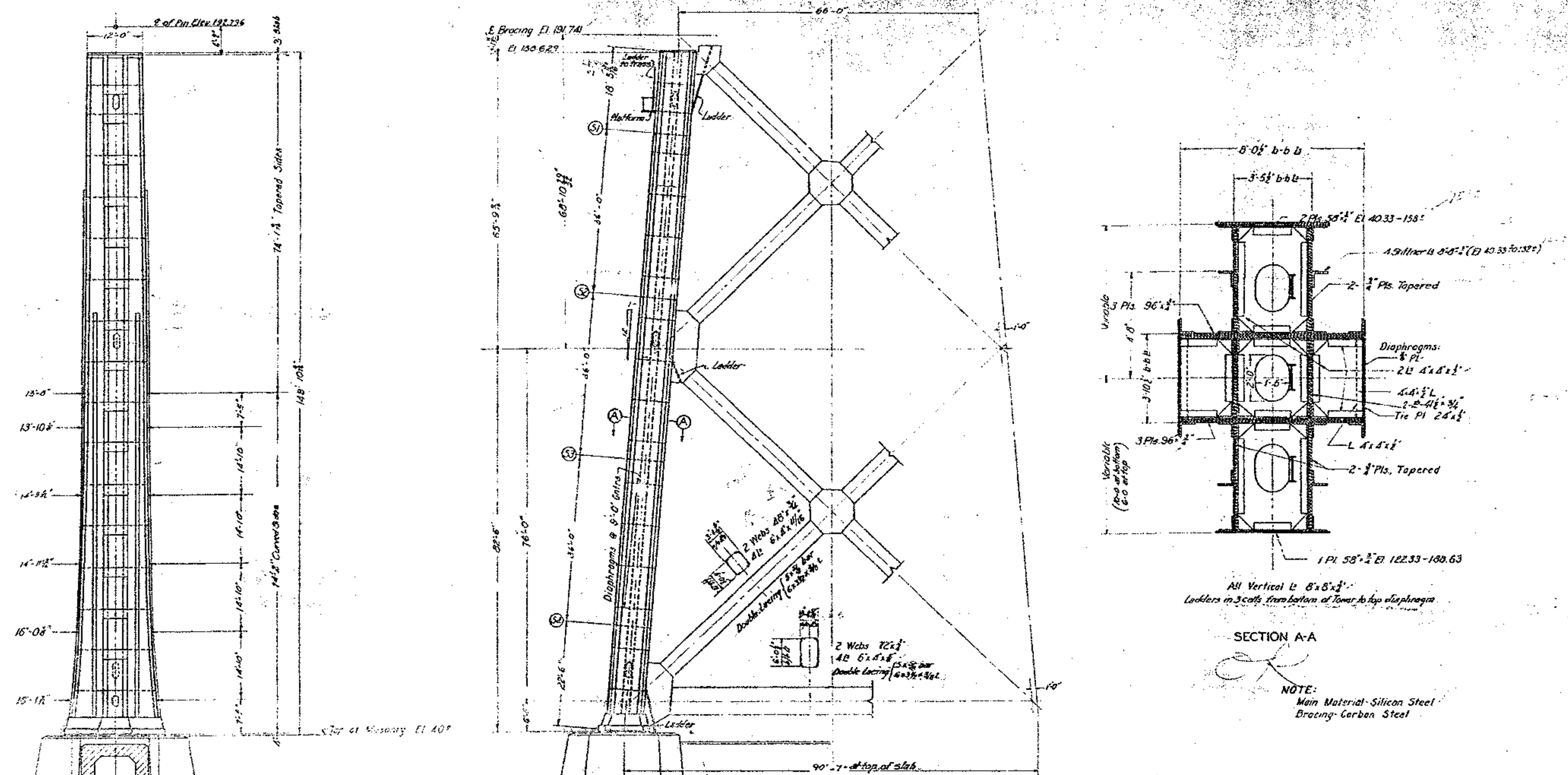
El. 111.8-77±	El. 77±-32±	El. 52±-33±
12∠s 8×6×5/8"	12∠s 8×6×3/4"	12∠s 8×6×3/4"
6∠s 8×8×5/8"	6∠s 8×8×3/4"	6∠s 8×8×3/4"
4 pls-42×5/8"	4 pls-42×3/4"	4 pls-42×3/4"
2 pls-36×5/8"	2 pls-36×3/4"	2 pls-36×3/4"
		5 pls-14×3/4"

Note.
Main Material, Bent E11 silicon steel, Bent YB3 carbon steel
Diaphragms, Bracing, Gussets carbon steel
1" ⌀ Rivets main member
7/8" ⌀ " bracing.
1 1/16" ⌀ Open holes.

4-15-38	Dimensions, Elevations	W.S.	
Date	Revision	Made	Ch'k'd

CORRECT
APPROVED
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE - EAST BAY CROSSING
BENTS · E11 · & · YB3
GENERAL PLAN
SCALE IN FEET
CONTRACT NO 7 SUP. DRAWING NO 6
AUGUST · 1933

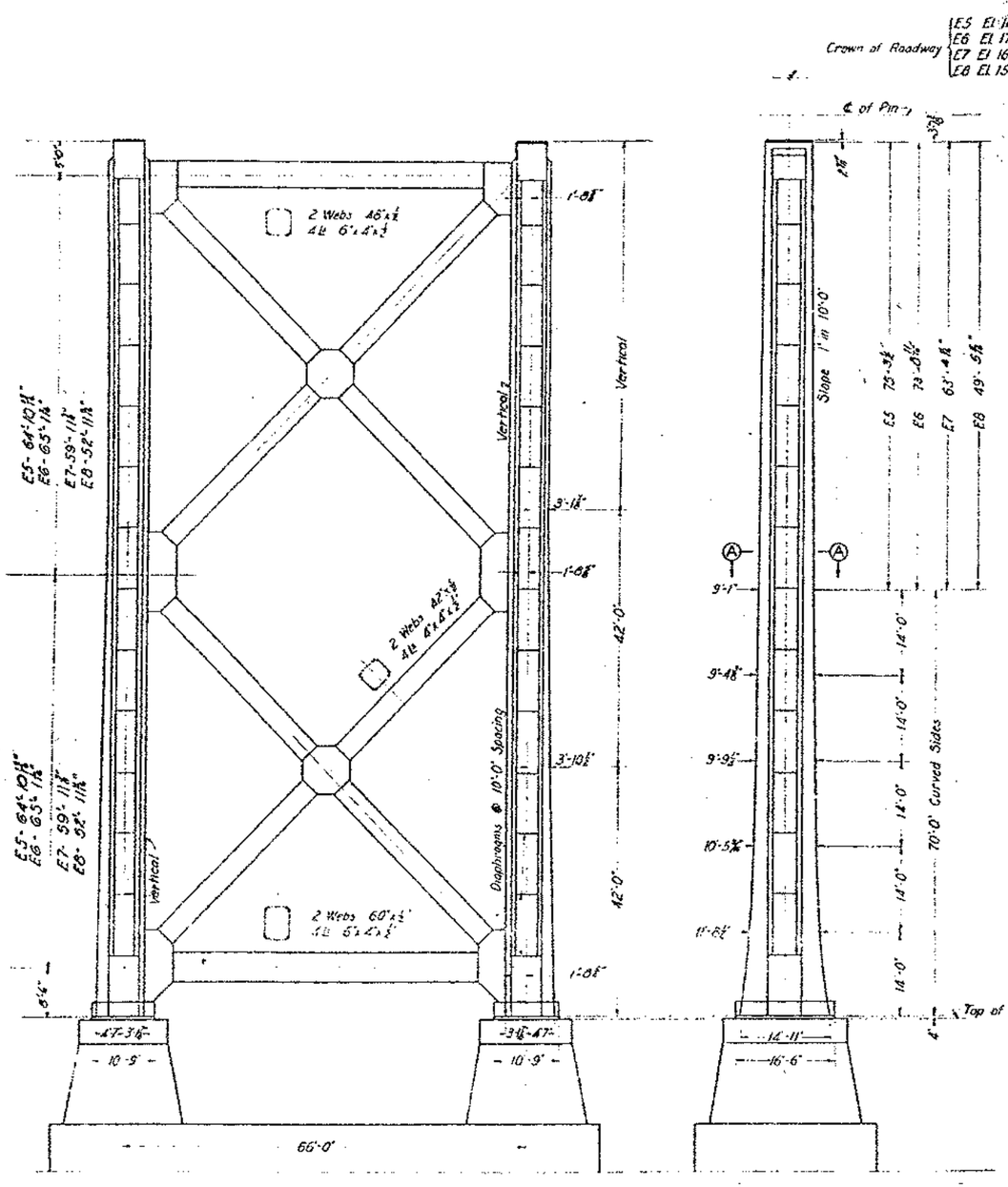


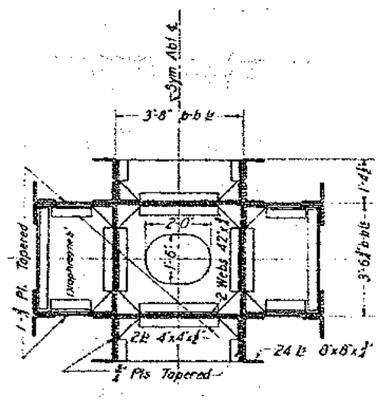
Date	Revisions	By	Chkd.
	As built Revisions		

CORRECT
APPROVED
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
BENTS E2 AND E3-GENERAL PLAN

CONTRACT NO. 7 SUP. DRAWING NO. 9
AUGUST - 1933





SECTION A-A

NOTE:
Main material of shafts to be silicon steel Towers E5 and E6.
" " " " " carbon " " E7 and E8.
Bracing to be carbon steel.

1-16-39	Dimensions Revised	T.L.L.	
Date	Revisions	By	Check

BOARD OF CONSULTING ENGINEERS

CORRECT:

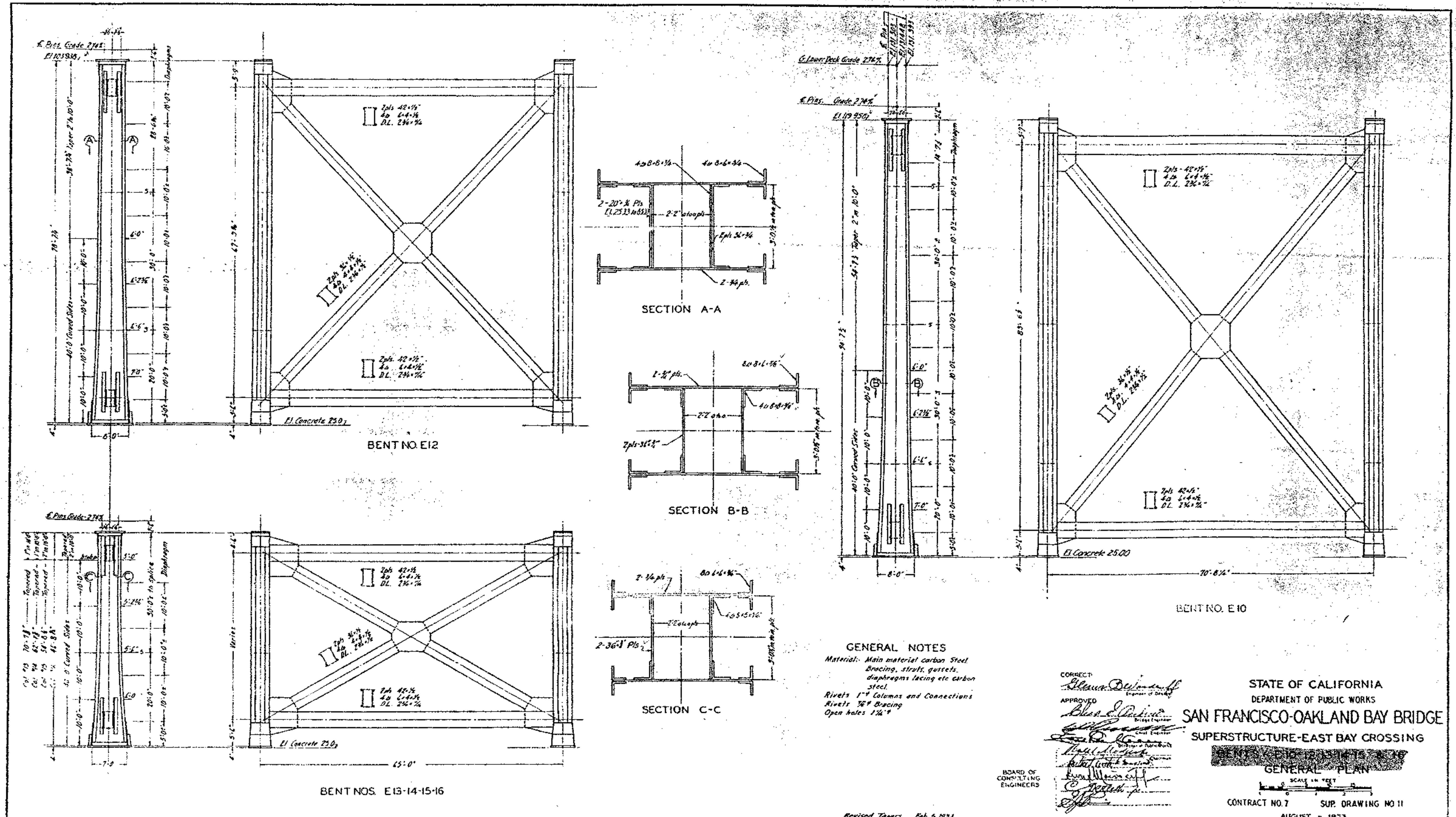
APPROVED:

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
BENTS E5 E6 E7 AND E8
GENERAL PLAN

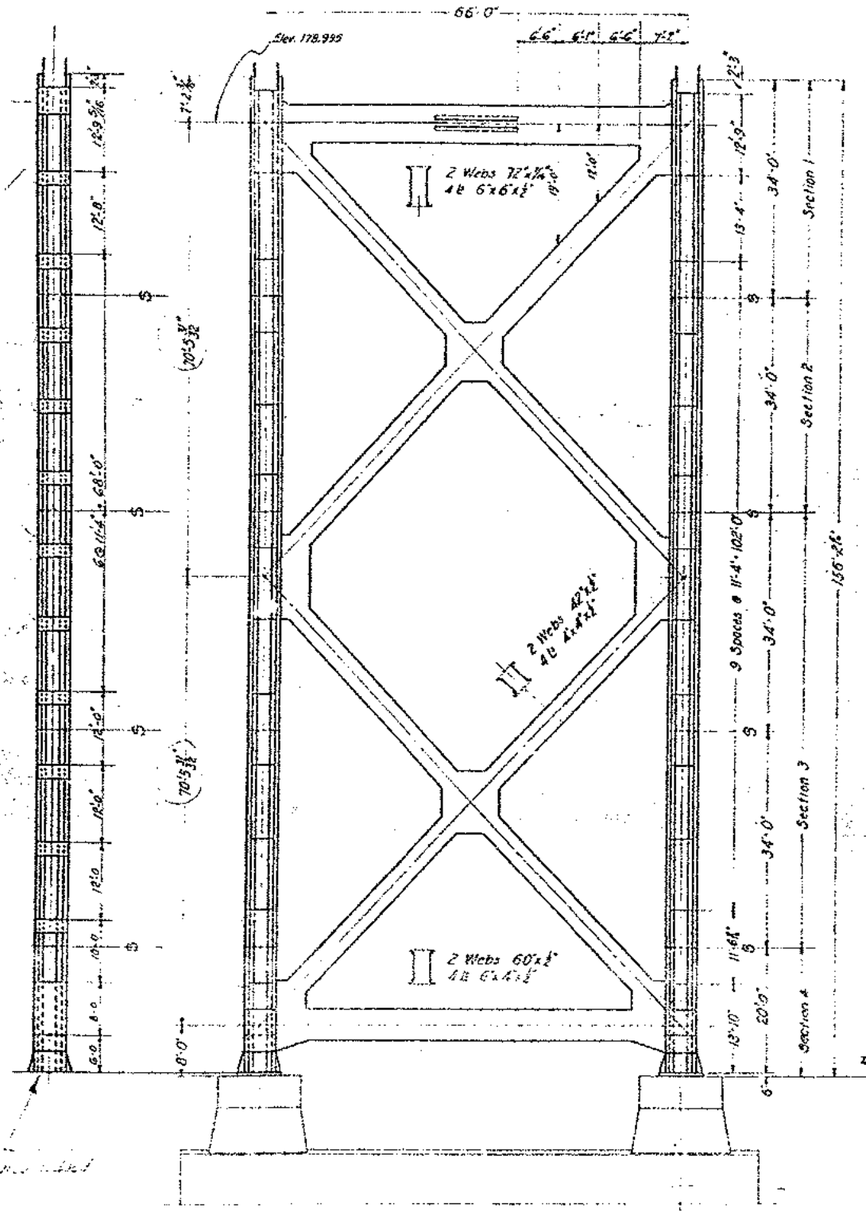
SECTION ELEVATION SCALES IN FEET 0 5 10 20 30

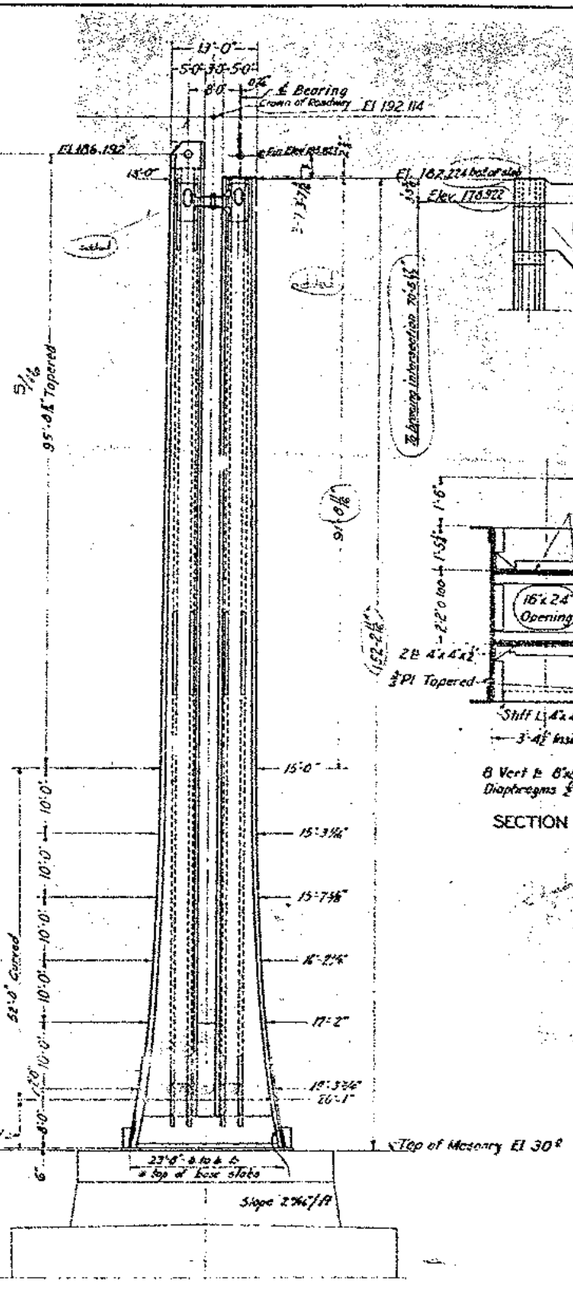
CONTRACT NO. 7 SUP. DRAWING NO. 16

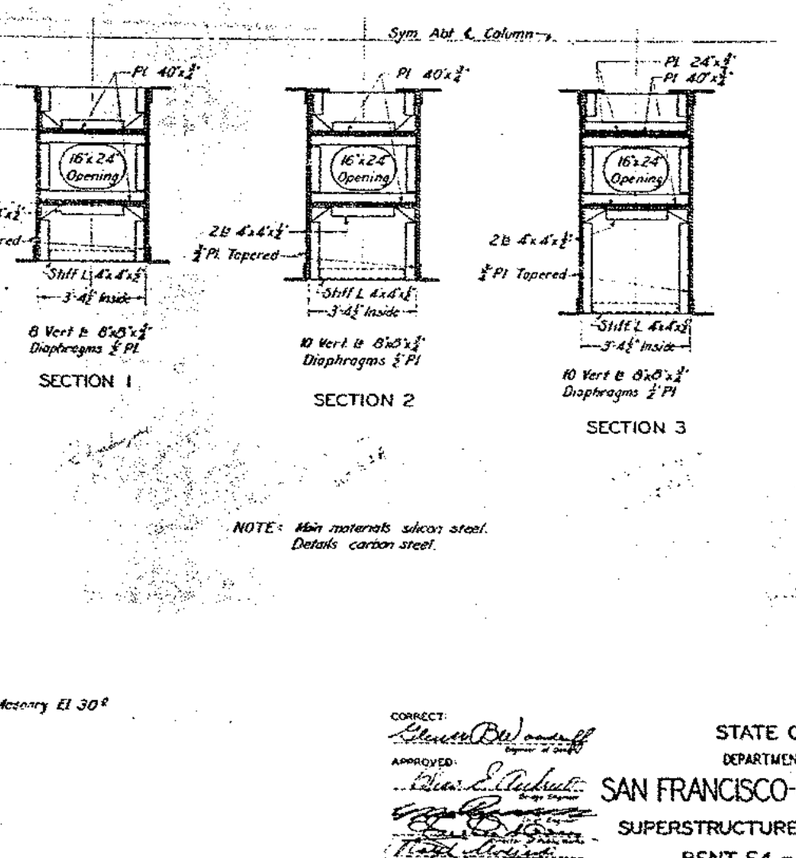
AUGUST - 1933



BENT NO. E12
SECTION A-A
SECTION B-B
SECTION C-C
BENT NO. E10
BENT NOS. E13-14-15-16
El. Concrete 25.0
El. Concrete 25.00
70'-8¼"
65'-0"
GENERAL NOTES
Material: Main material carbon steel
Bracing, struts, gussets, diaphragms lacing etc carbon steel.
Rivets 1" ϕ Columns and Connections
Rivets ⅞" ϕ Bracing
Open holes 1 1/16" ϕ
CORRECT
APPROVED
BOARD OF CONSULTING ENGINEERS
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
BENTS E10-12-13-14-15 & 16
GENERAL PLAN
CONTRACT NO. 7
SUP. DRAWING NO 11
AUGUST - 1933
Revised Tapers Feb. 5 1934







Note:- Dimensions and Elevations given are for loaded condition. Before bents are stressed the struts and bracing line up.

NOTE: Main materials silicon steel. Details carbon steel.

1-8-39	Corrections made	H.E.
5-1-36	Revisions made	
10-8-35	Revisions made	
3-28-35	Corrections made	
Date	Revision	By Chief

BOARD OF CONSULTING ENGINEERS

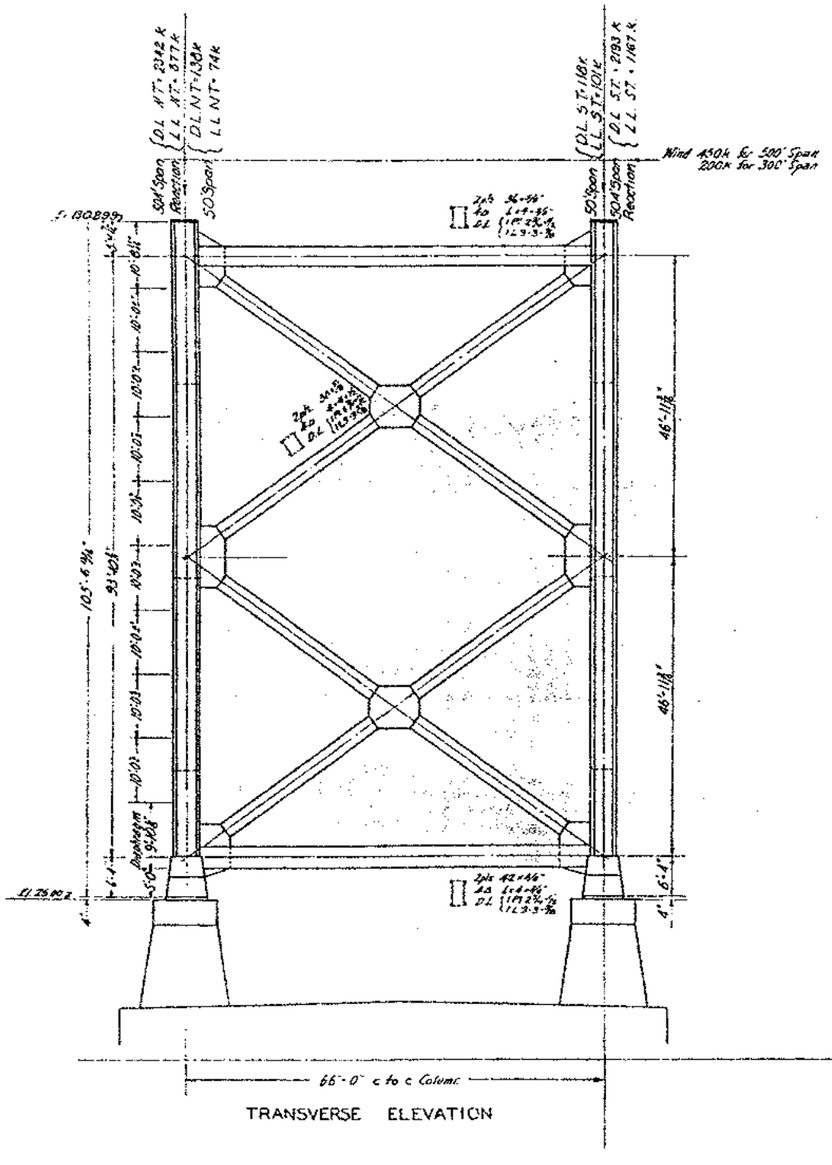
CORRECT:
Glenn B. Woodruff
Engineer in Charge

APPROVED:
Chas. E. Andrews
Bridge Engineer

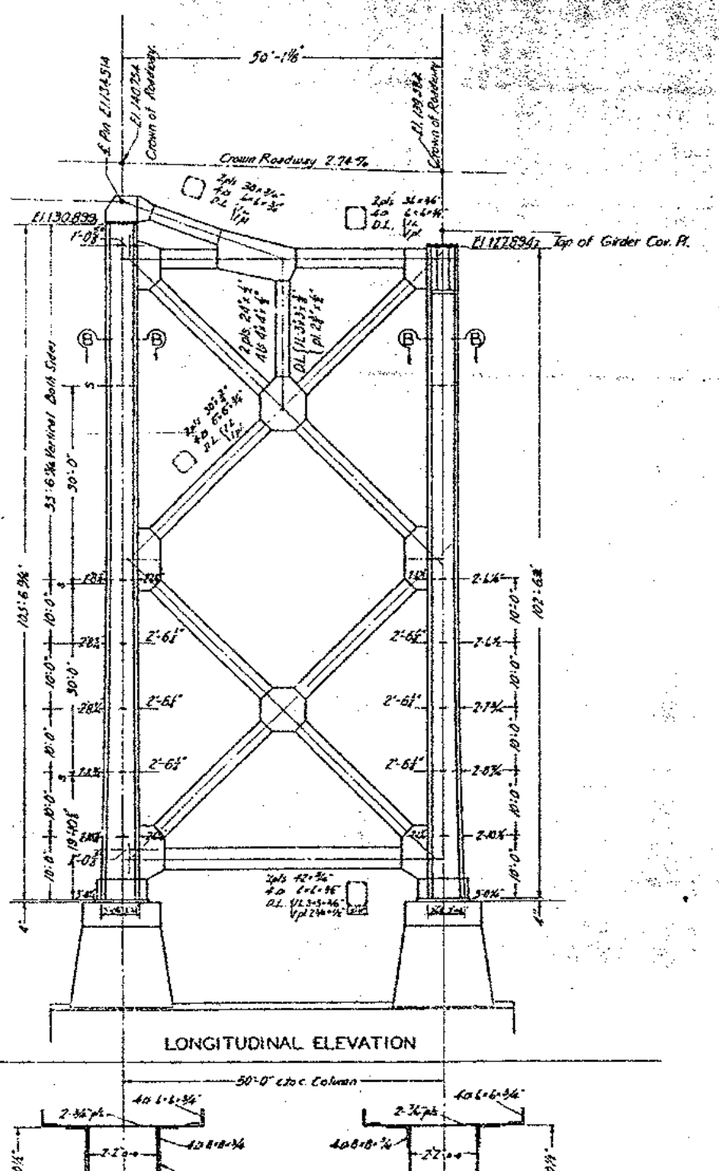
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
BENT E4 - GENERAL PLAN

SCALE IN FEET
ELEVATION 0 5 10 20
SECTIONS 1 0 1 2 3 4

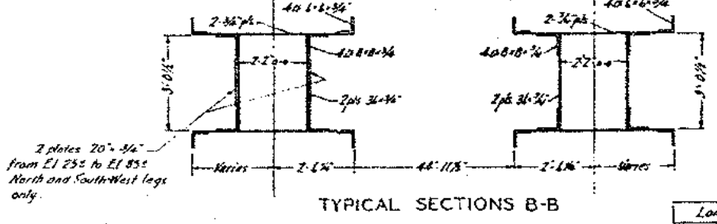
CONTRACT NO. 7 SUR. DRAWING NO. 12
AUGUST - 1932



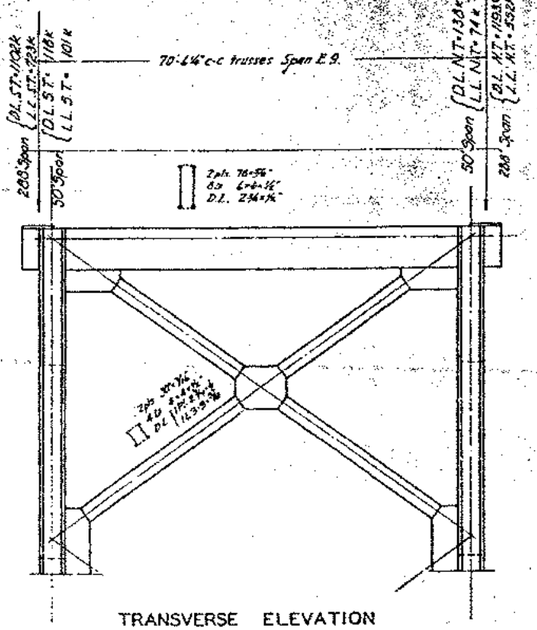
TRANSVERSE ELEVATION



LONGITUDINAL ELEVATION



TYPICAL SECTIONS B-B



TRANSVERSE ELEVATION

GENERAL NOTES

Material: Main Columns Silicon Steel
Bracing, Gussets Diaphragms, Lacing etc. Carbon Steel.
Rivets:- Columns & Connections 1"ϕ
Details 7/8"ϕ
Open Holes: 1 1/16"ϕ

Longitudinal Wind	(Revised: Jan 30, 1934)
504' Span Eccentricity	(Revised: Jan. 4, 1934)
	(Revised: Dec. 11, 1933)

BOARD OF CONSULTING ENGINEERS

CORRECT: Glenn B. Woodruff
APPROVED: Chas. E. Andrus

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

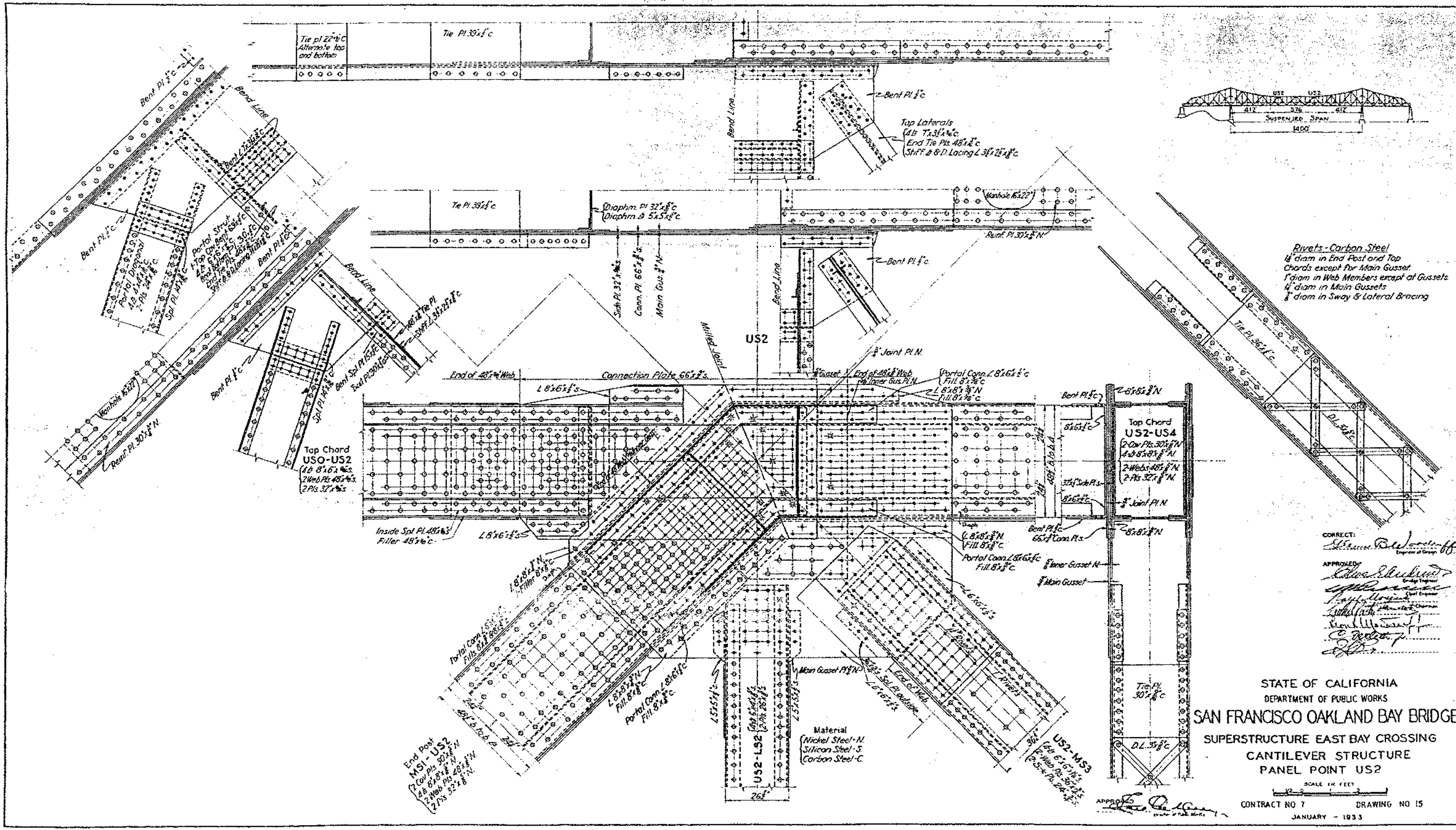
SAN FRANCISCO-OAKLAND BAY BRIDGE

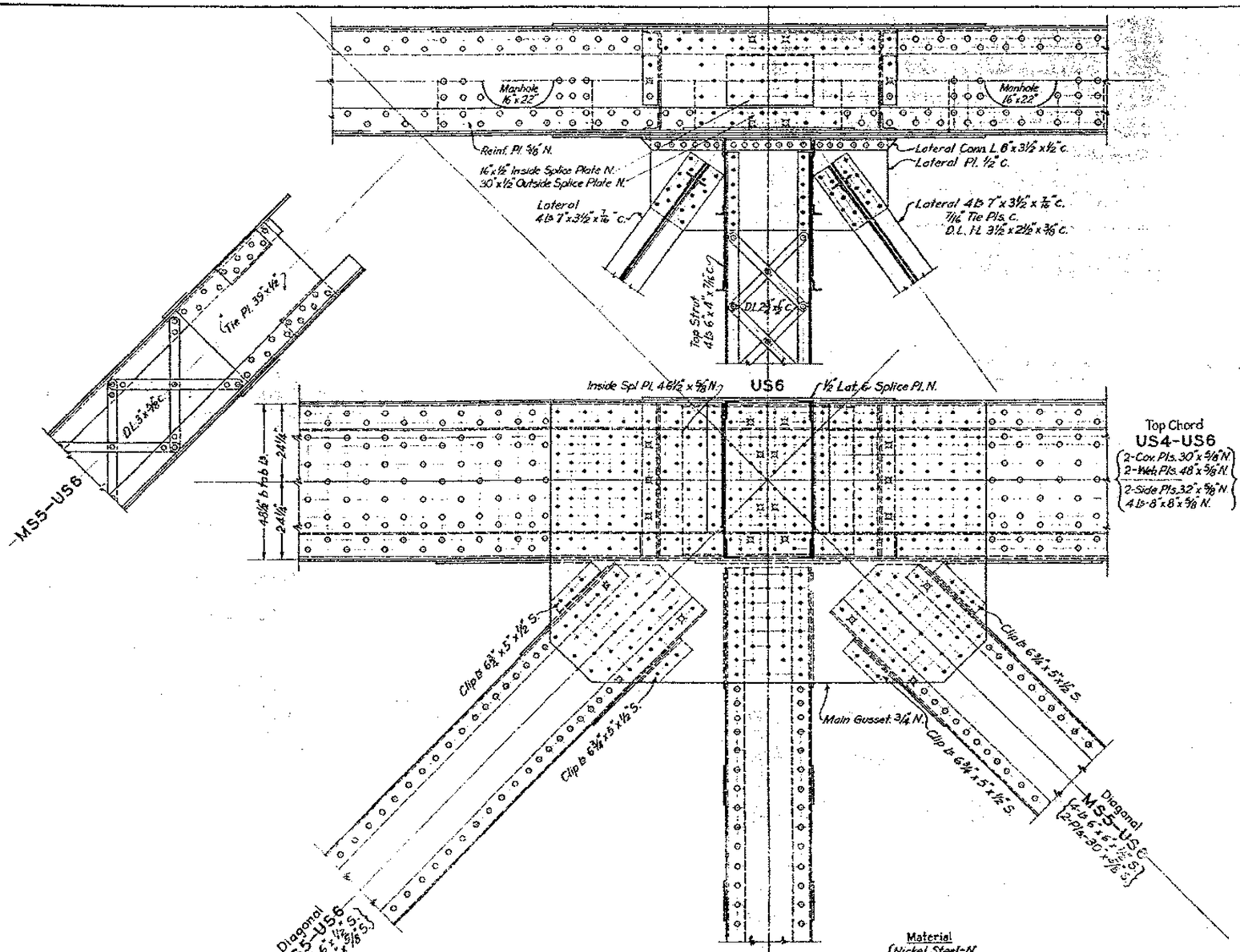
SUPERSTRUCTURE-EAST BAY CROSSING

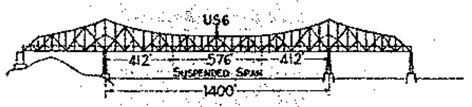
GENERAL PLAN

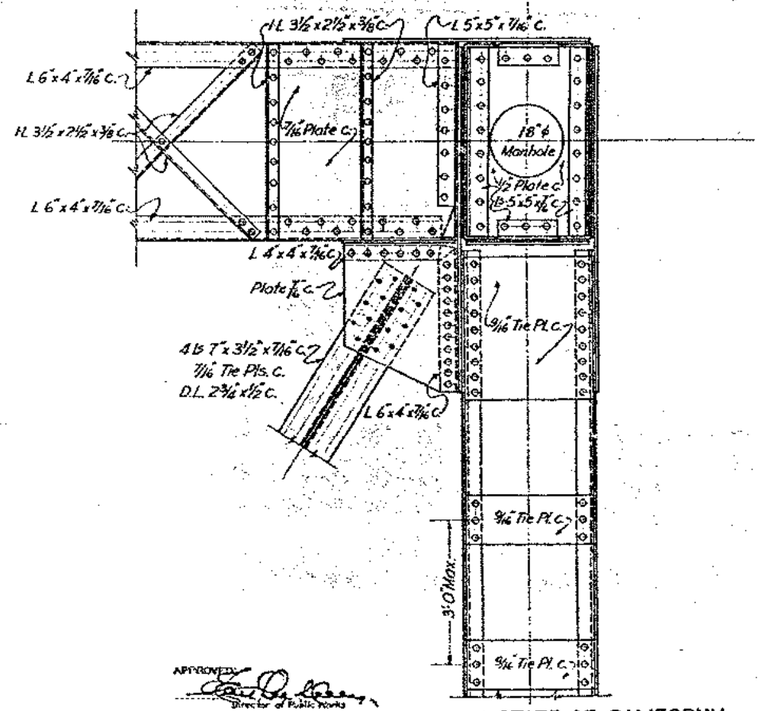
CONTRACT NO. 7 SUP. DRAWING NO. 13

AUGUST - 1933


STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO OAKLAND BAY BRIDGE
SUPERSTRUCTURE EAST BAY CROSSING
CANTILEVER STRUCTURE
PANEL POINT US2
SCALE IN FEET
CONTRACT NO 7
DRAWING NO 15
JANUARY - 1933
CORRECT:
APPROVED:
US2
Rivets - Carbon Steel
Material
Nickel Steel - N.
Silicon Steel - S.
Carbon Steel - C.
Top Chord
USO-US2
Top Chord
US2-US4
End Post
MSI-US2
US2-LS2
US2-MS3
Top Laterals
Connection Plate 66"x 3/4"s.
Milled Joint
Bend Line
Suspended Span
1400







APPROVED:
Director of Public Works

CORRECT:
Engineer of Design

APPROVED:
Bridge Engineer
Chief Engineer

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

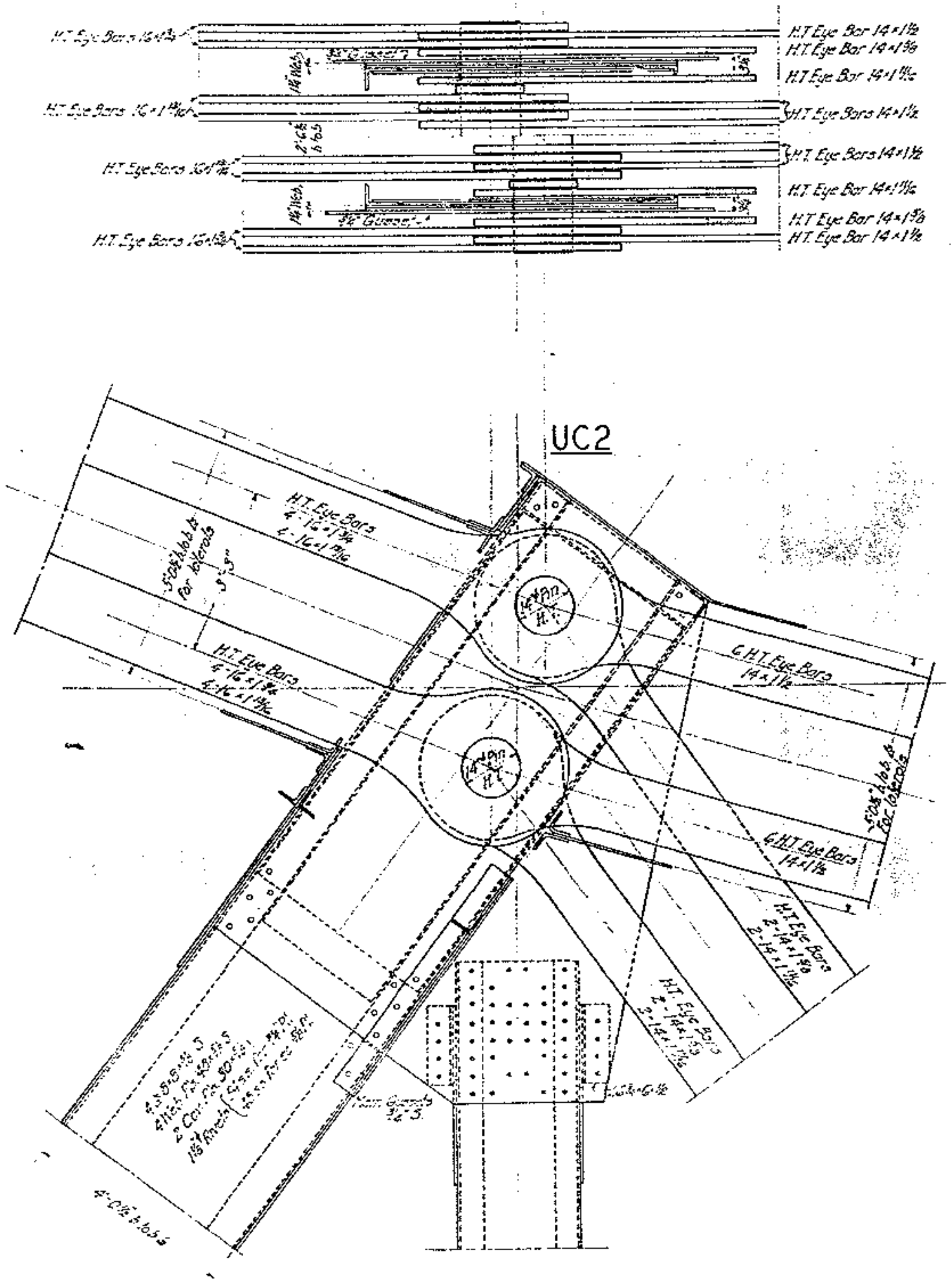
SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER STRUCTURE
PANEL POINT-US6

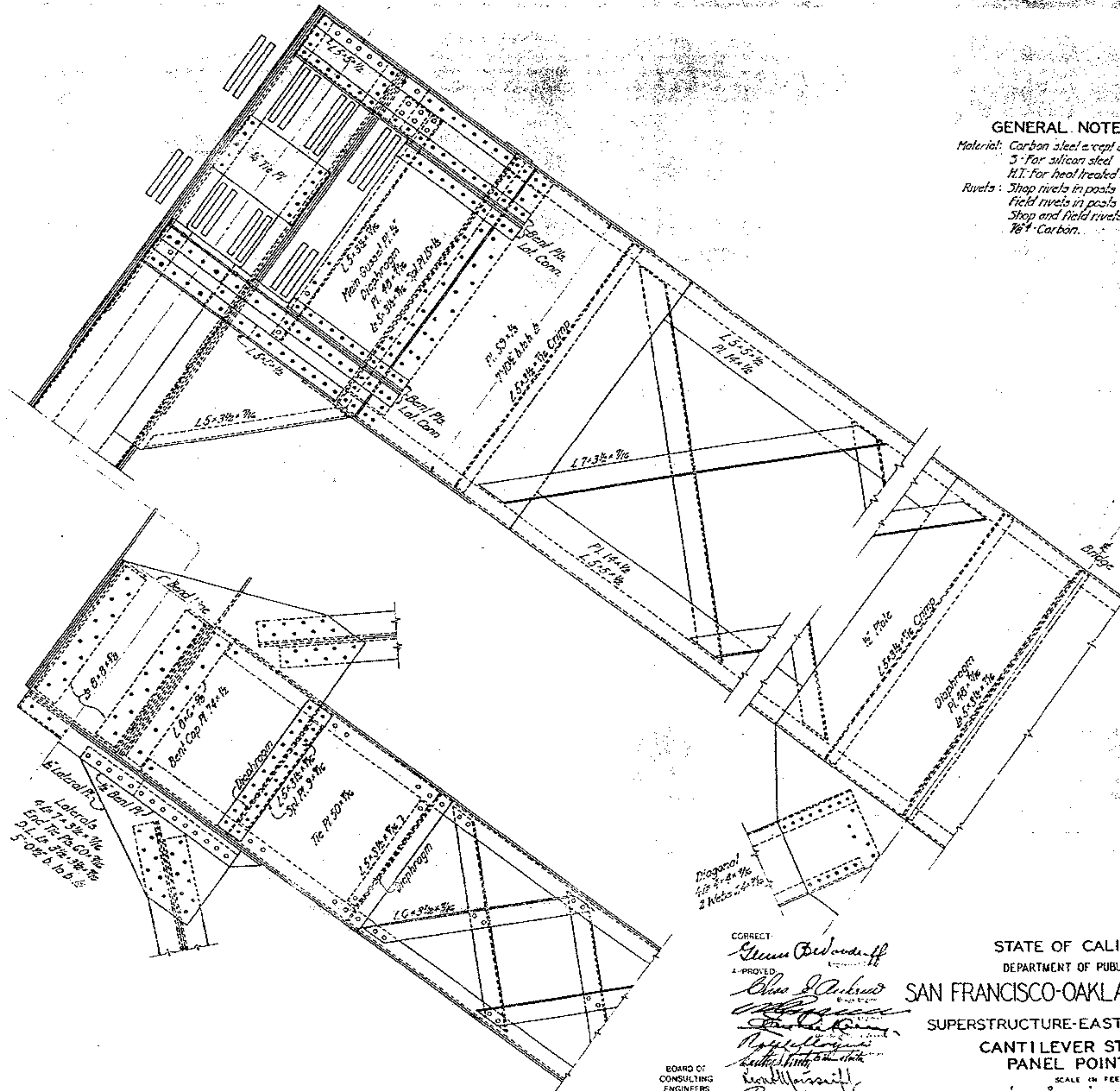
SCALE IN FEET
0 1 2 3

CONTRACT NO. 7 DRAWING NO. 16

JANUARY -1933

D.C.M.





GENERAL NOTES

Material: Carbon steel except as noted.
S - For silicon steel
H.T. - For heat treated steel

Rivets: Shop rivets in posts 1⅛"⌀ - Carbon
Field rivets in posts 1¼"⌀ - Carbon
Shop and field rivets in bracing ⅞"⌀ - Carbon.

CORRECT:
Glenn B. Woodruff
APPROVED:
Chas. E. Andrew
Bridge Engineer

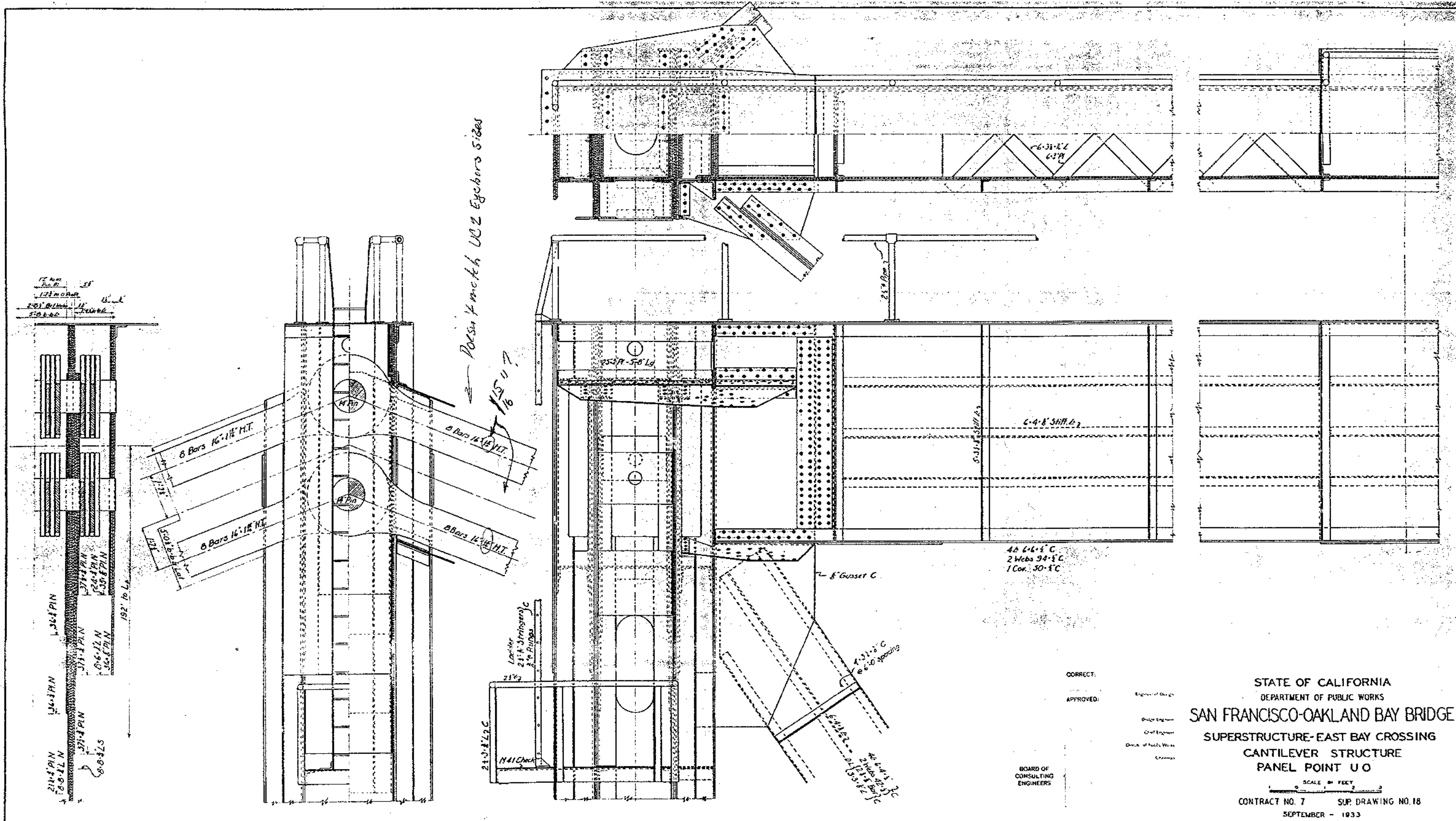
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER STRUCTURE
PANEL POINT UC2

SCALE IN FEET

CONTRACT NO 7 DRAWING NO 17

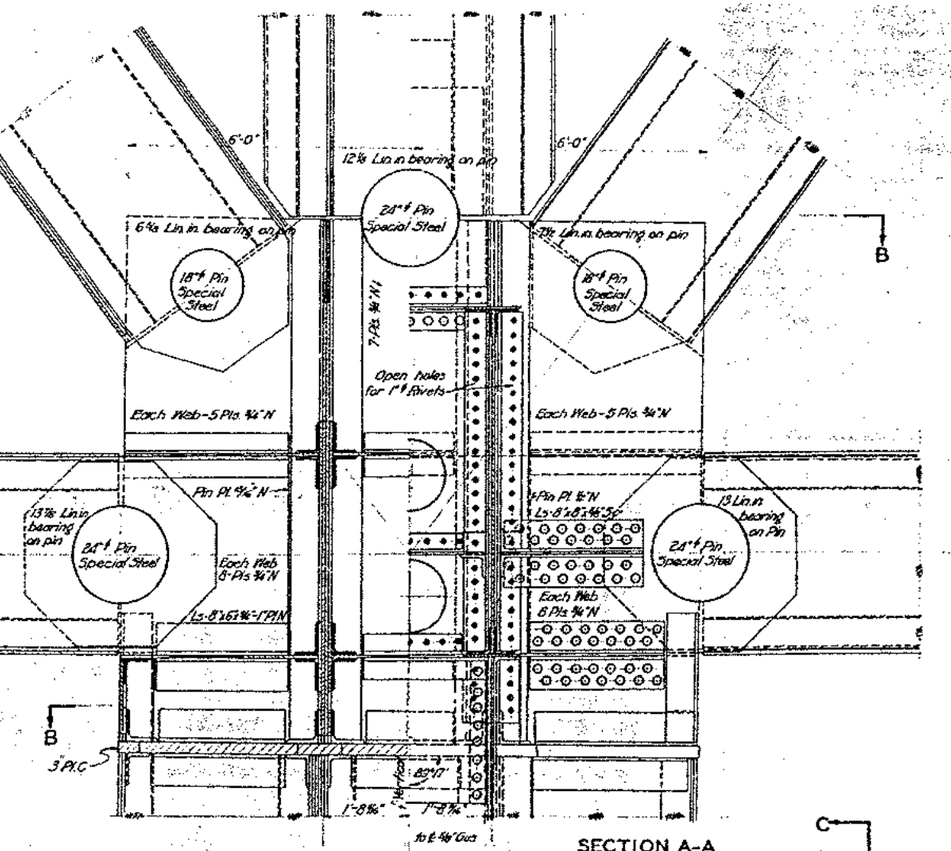
JANUARY - 1933

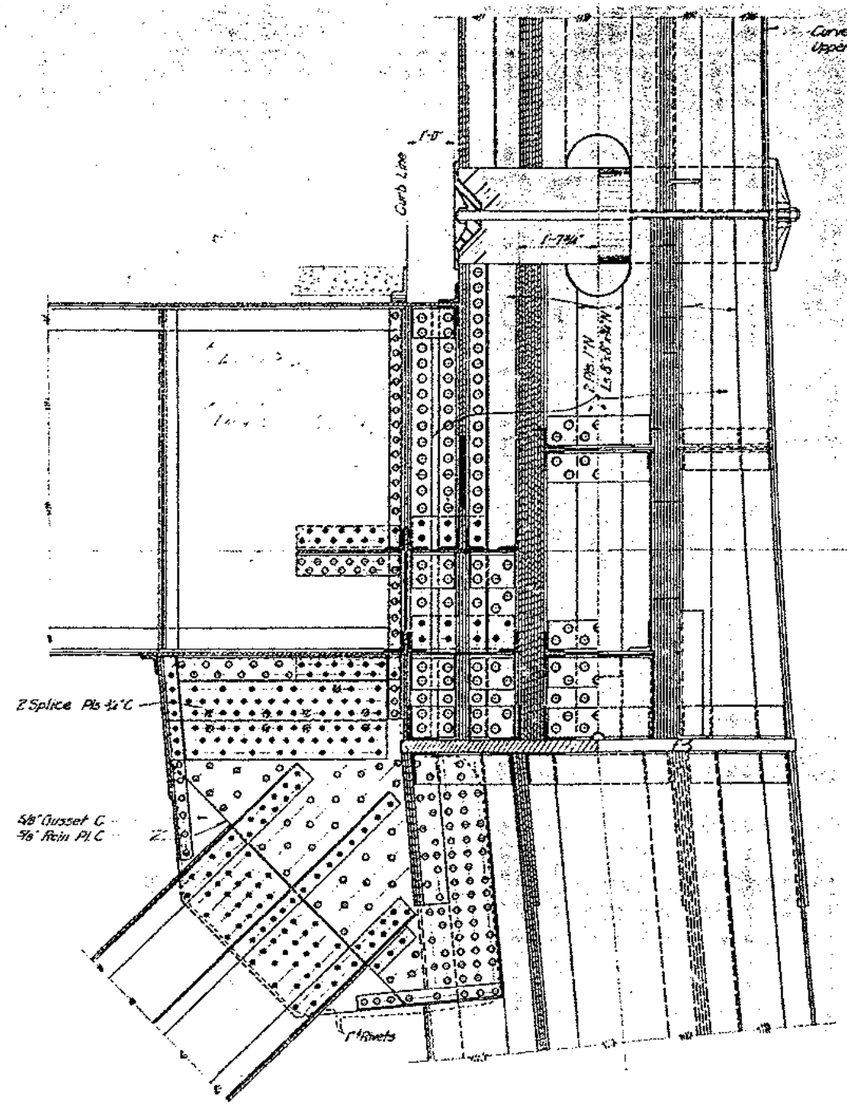


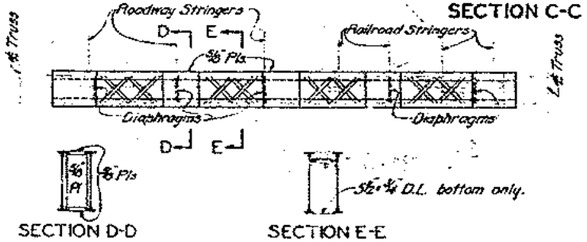
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER STRUCTURE
PANEL POINT U O

CORRECT:
APPROVED:
BOARD OF CONSULTING ENGINEERS

CONTRACT NO. 7 SUP. DRAWING NO. 18
SEPTEMBER - 1933







CORRECT.

APPROVED.

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

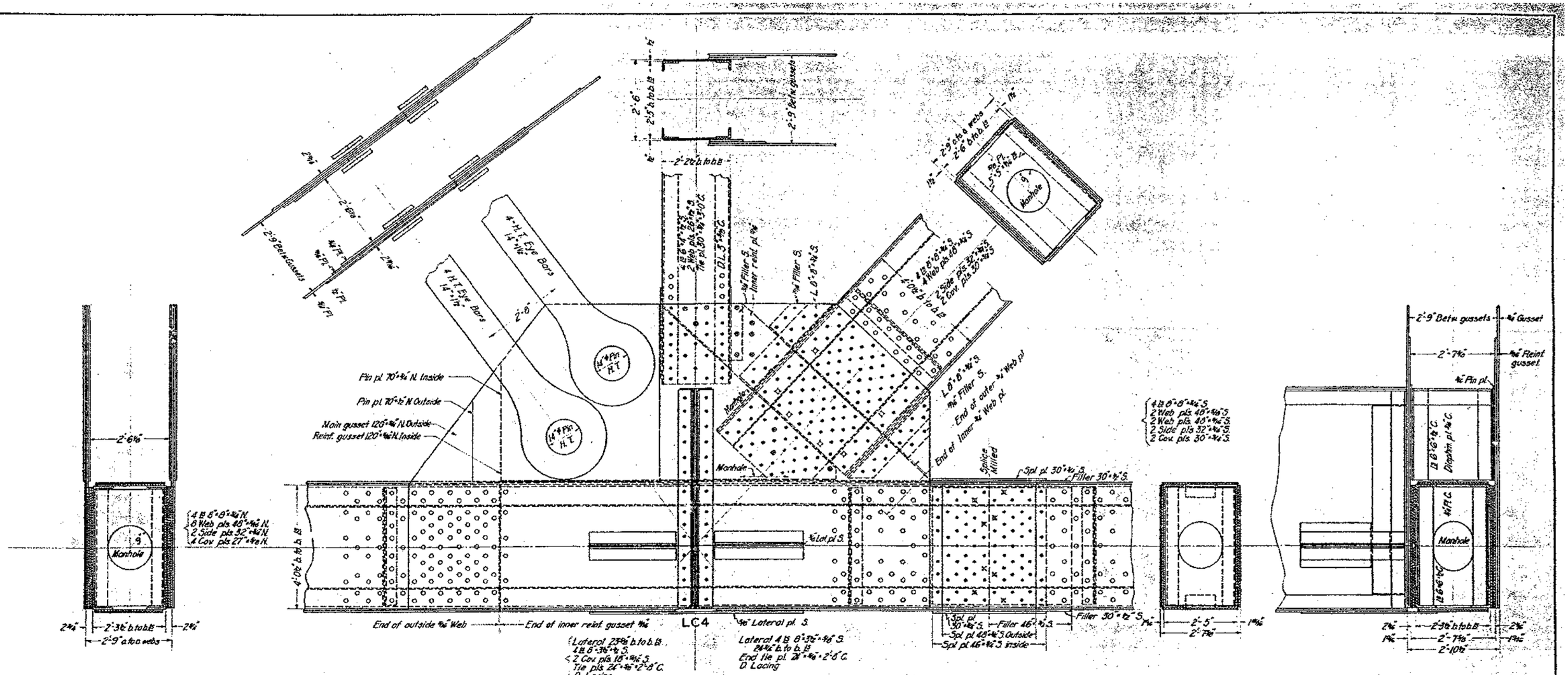
SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER STRUCTURE
PANEL POINT L0

SCALE IN FEET

CONTRACT NO 7 — SUP. DRAWING NO 19

AUGUST - 1933

Revised 10-25-33



MATERIAL

Heat Treated H.T
Nickel Steel N.
Silicon Steel S.
Carbon Steel C.

Rivets for Truss Members
Field ⅞" Manganese in splices and gussets
Shop 1⅛" Carbon
Rivets for bracing ⅞" Carbon

BOARD OF CONSULTING ENGINEERS

CORRECT: Glenn B. Woodruff
APPROVED: Chas. E. Andrus

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

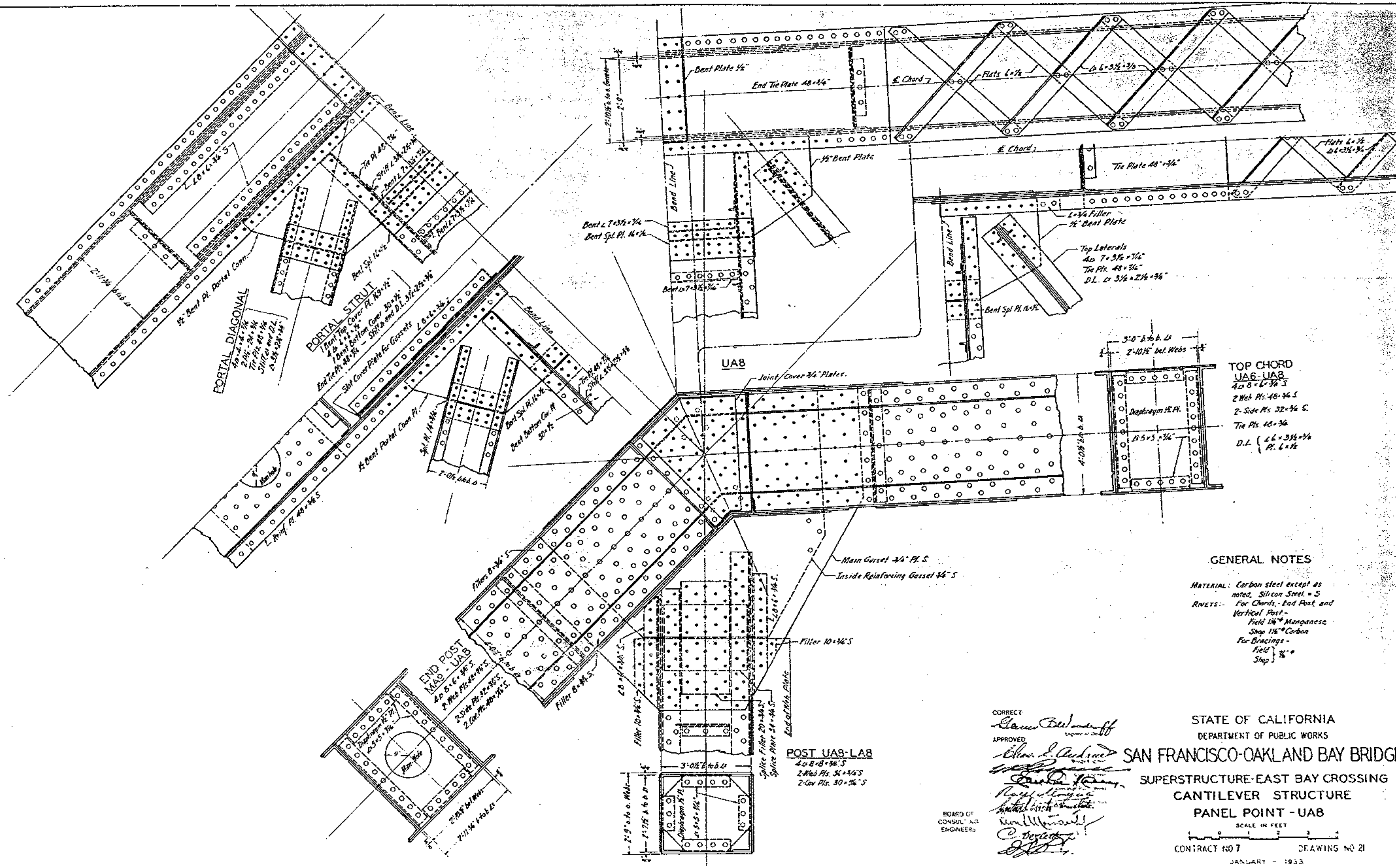
SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER STRUCTURE
PANEL POINT L C 4

SCALE IN FEET

CONTRACT NO 7 DRAWING NO 20

JANUARY - 1933



GENERAL NOTES

MATERIAL: Carbon steel except as noted. Silicon Steel = S

RIVETS: For Chords, End Post and Vertical Post - Field 1¼" ⌀ Manganese, Shop 1⅛" ⌀ Carbon. For Bracings - Field, Shop } ⅞" ⌀

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

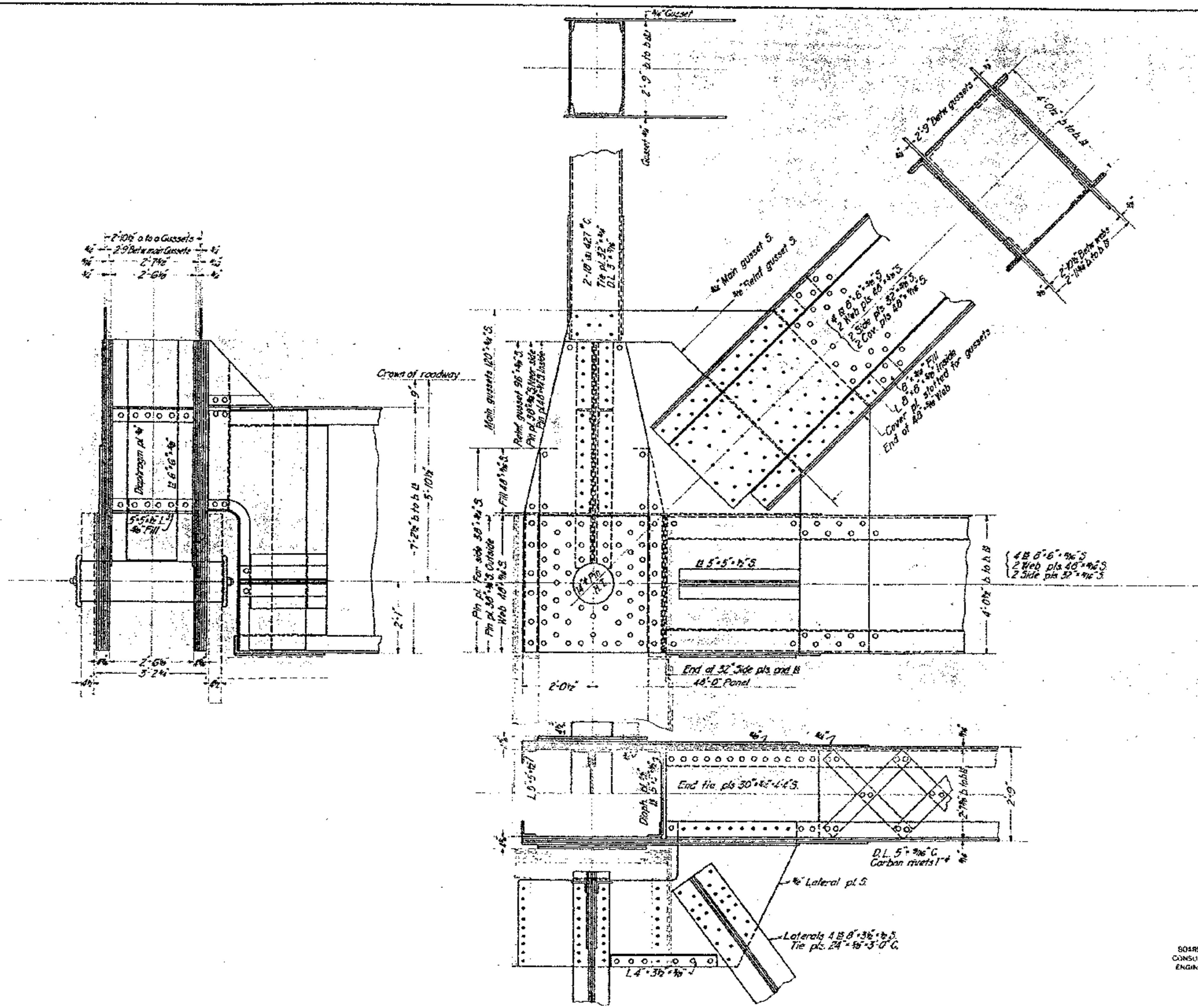
CANTILEVER STRUCTURE

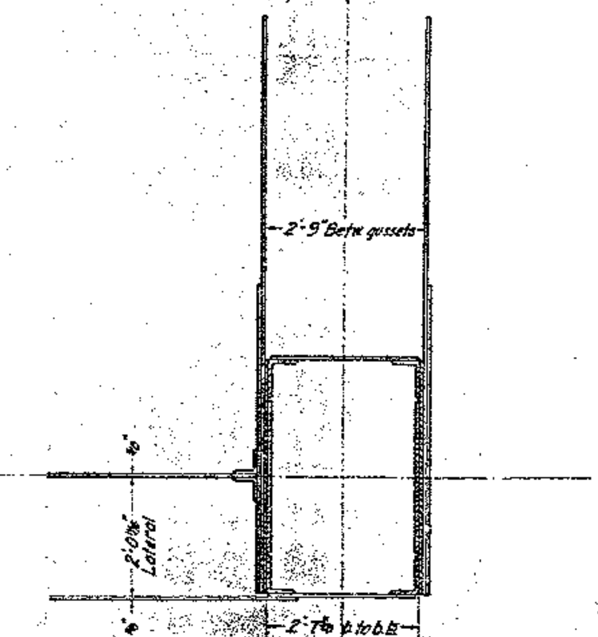
PANEL POINT - UA8

SCALE IN FEET

CONTRACT NO 7 DRAWING NO 21

JANUARY - 1933





MATERIAL

Carbon Steel unless noted
S for Silicon Steel
H.T. for Heat treated Steel

Rivets { For truss members { Shop 1⅛"φ Carbon; Field 1⅛"φ Manganese } ; For lateral bracing ⅞"φ Carbon }

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

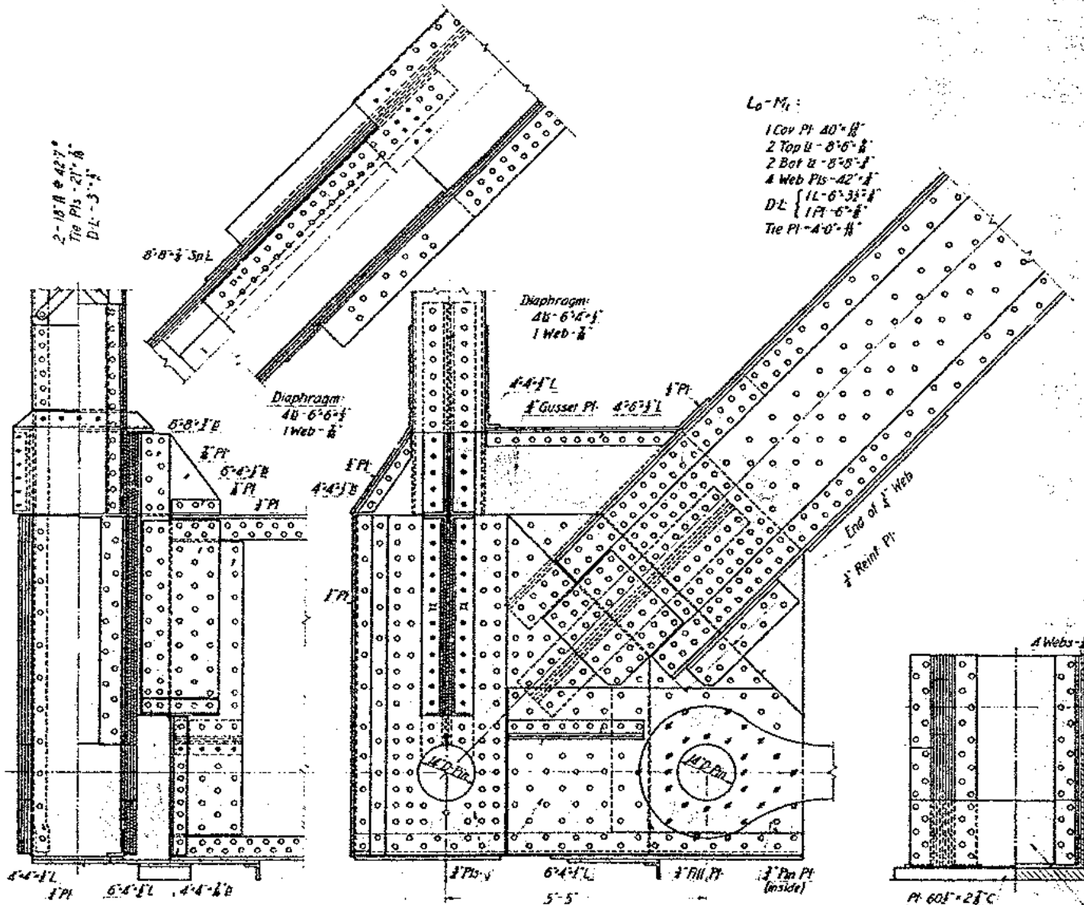
CANTILEVER STRUCTURE

LA10

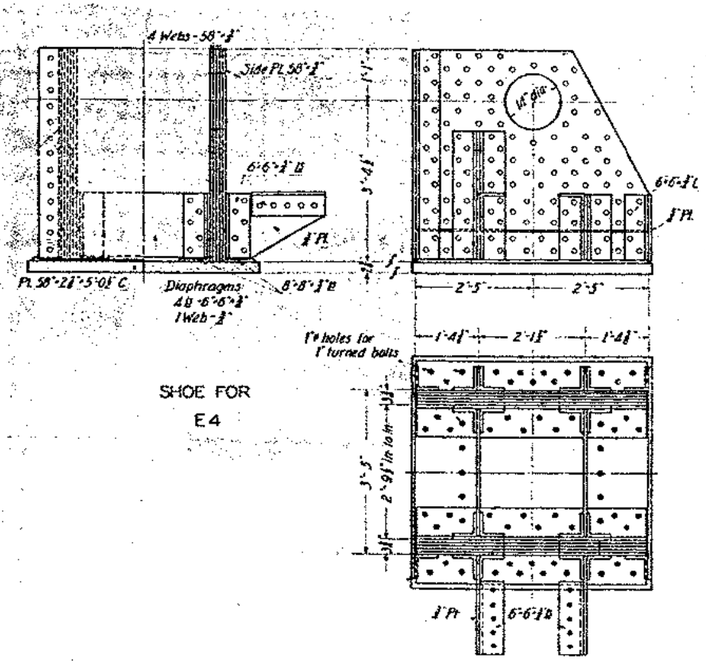
SCALE IN FEET

CONTRACT NO 7 DRAWING NO 22

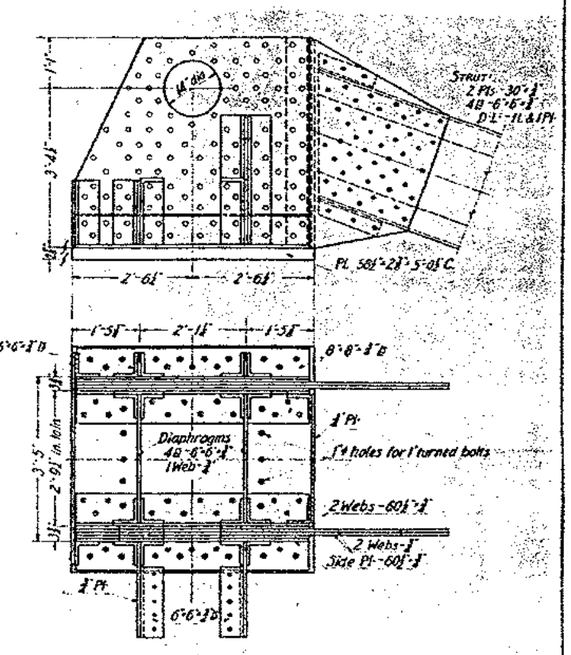
JANUARY - 1933



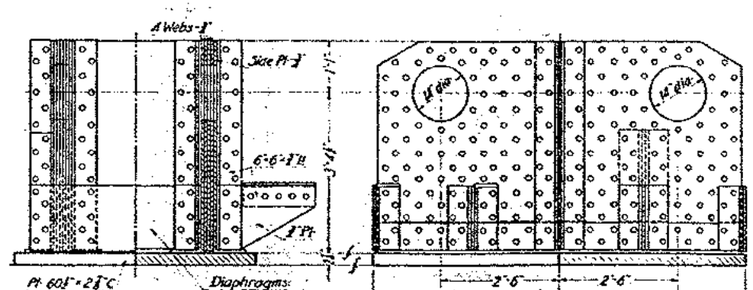
JOINT LO



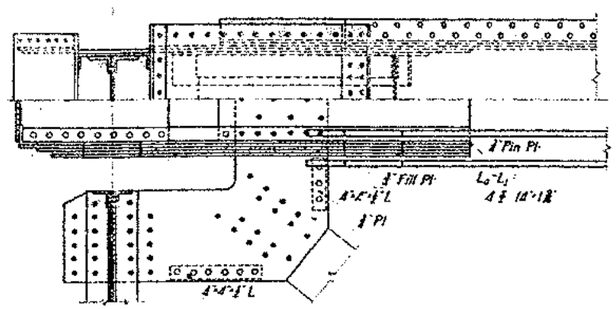
SHOE FOR
E4



SHOE FOR
E9



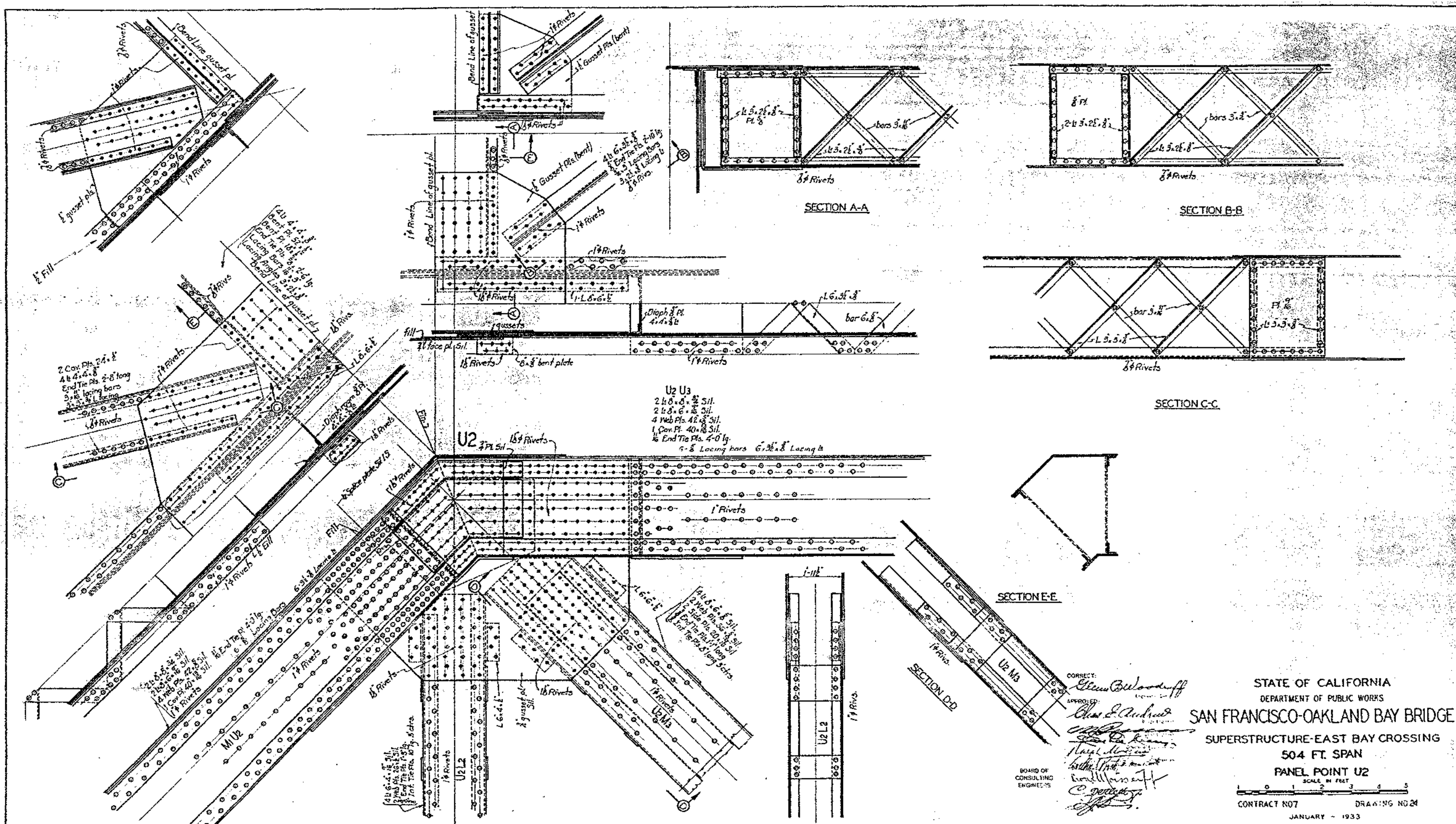
SHOE FOR
E5, E6, E7 & E8



NOTES:
Material - Silicon steel except where noted 'C' which is carbon steel
Rivets - 1⅛"ϕ in connections at LO.
1"ϕ in shoes.
⅞"ϕ in floor beams.

CORRECT:
Glenn B. Woodruff
Engineer in Charge
APPROVED:
Chas. E. Andrew
Bridge Engineer
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
504 FT. SPAN
PANEL POINT LO
SCALE IN FEET
CONTRACT NO 7
DRAWING NO 23
JANUARY - 1933



STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

504 FT. SPAN

PANEL POINT U2

SCALE IN FEET

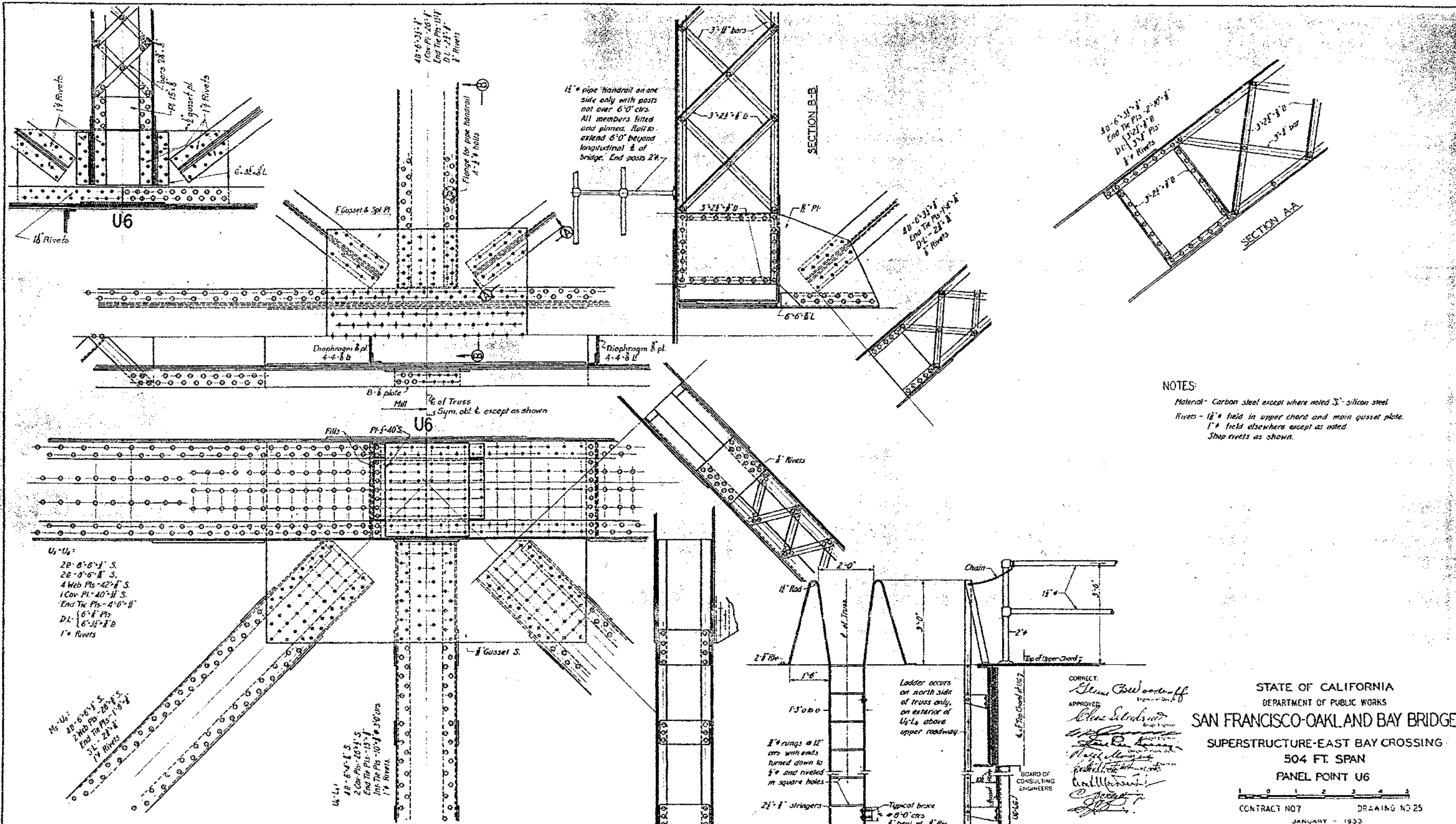
CONTRACT NO7 DRAWING NO 24

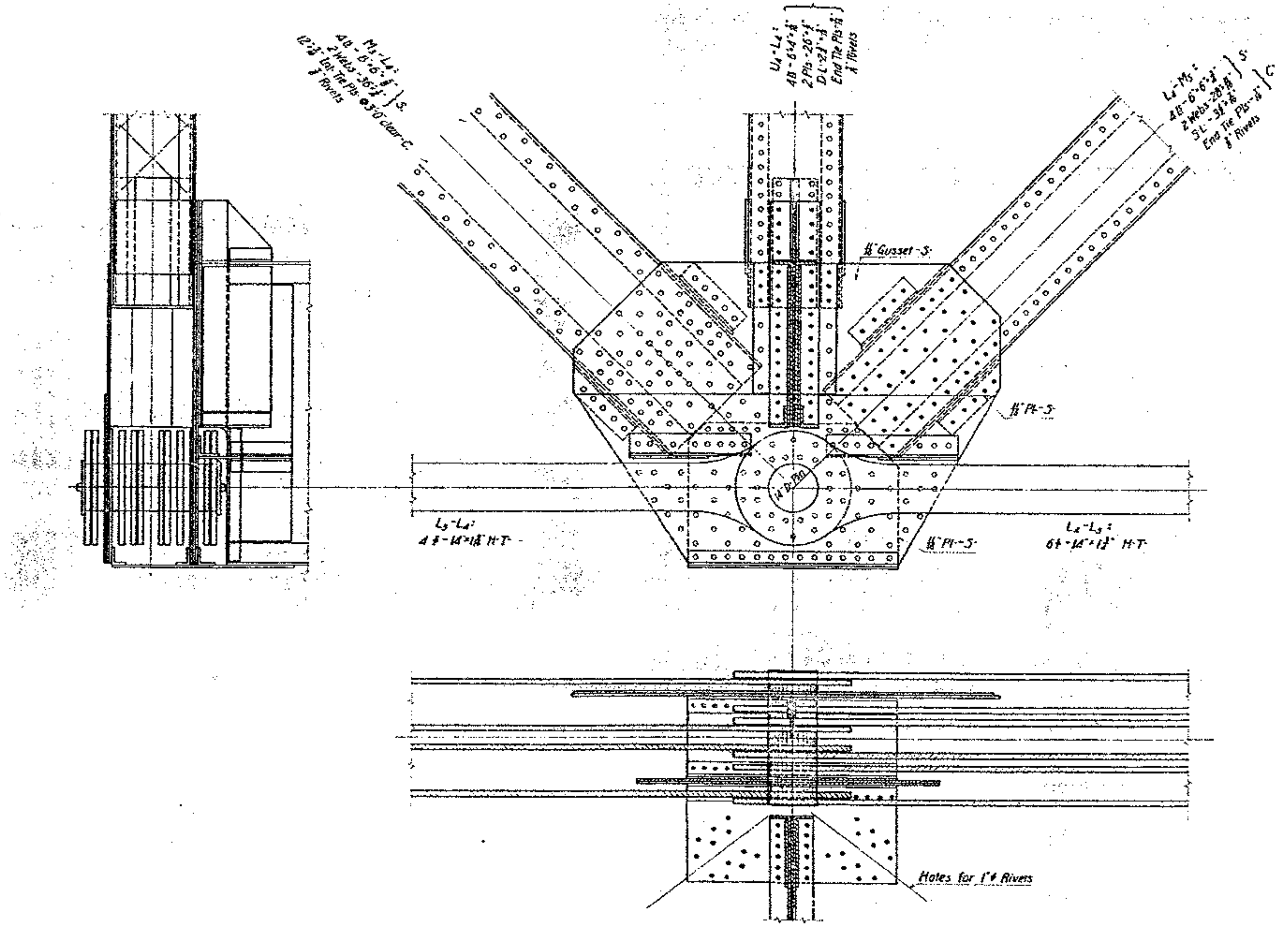
JANUARY - 1933

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS


U6
SECTION B-B
SECTION A-A
Diaphragm ⅜" pl. 4-4-⅜ L
℄ of Truss
Sym. abt. ℄ except as shown
NOTES:
Material - Carbon steel except where noted S - silicon steel.
Rivets - 1⅛" ϕ field in upper chord and main gusset plate. 1" ϕ field elsewhere except as noted. Shop rivets as shown.
Ladder occurs on north side of truss only, on exterior of U6-L6 above upper roadway.
Typical brace @ 8'-0" ctrs
Top of Upper Chord
Chain
BOARD OF CONSULTING ENGINEERS
CORRECT:
APPROVED:
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
504 FT. SPAN
PANEL POINT U6
CONTRACT NO 7
DRAWING NO 25
JANUARY - 1933



NOTES:

Material - as noted - C - Carbon Steel.
S - Silicon Steel.
H·T· - Heat-treated Steel.

Rivets - 1" ϕ except in main gusset where field and shop rivets are 1⅛" ϕ.

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

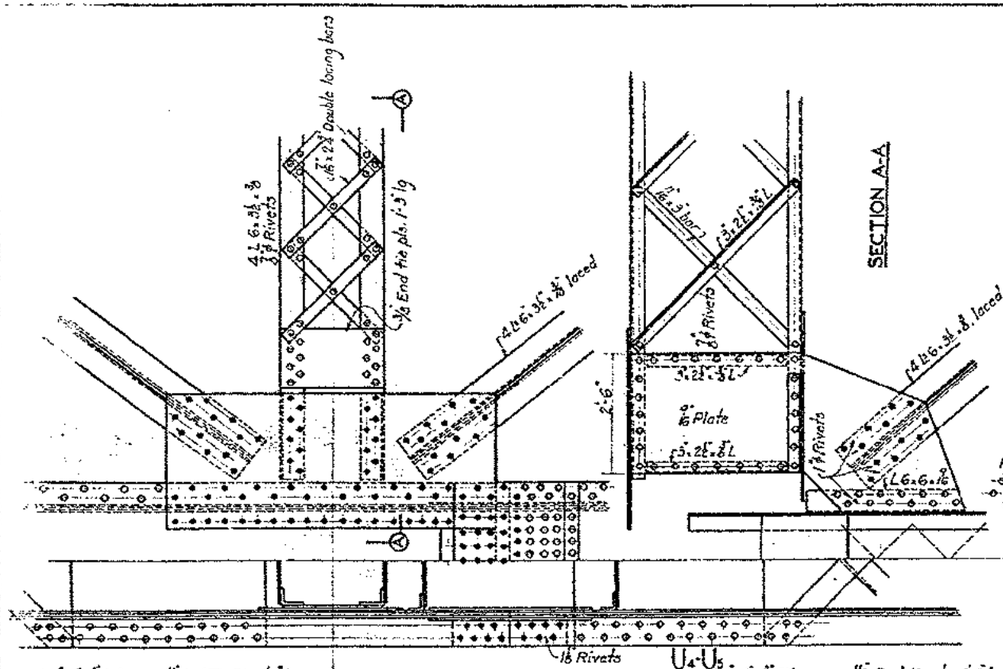
504 FT. SPANS

PANEL POINT L 4

SCALE IN FEET

CONTRACT NO 7 DRAWING NO 26

JANUARY - 1933



NOTES

U3 and U5 are similar to U4 except as shown and noted.
Material: Carbon steel except where noted.
Shop rivets as noted.
Field rivets 1⅛" in chord
1" in lateral connections.

CORRECT:
Glenn B. Woodruff
Engineer

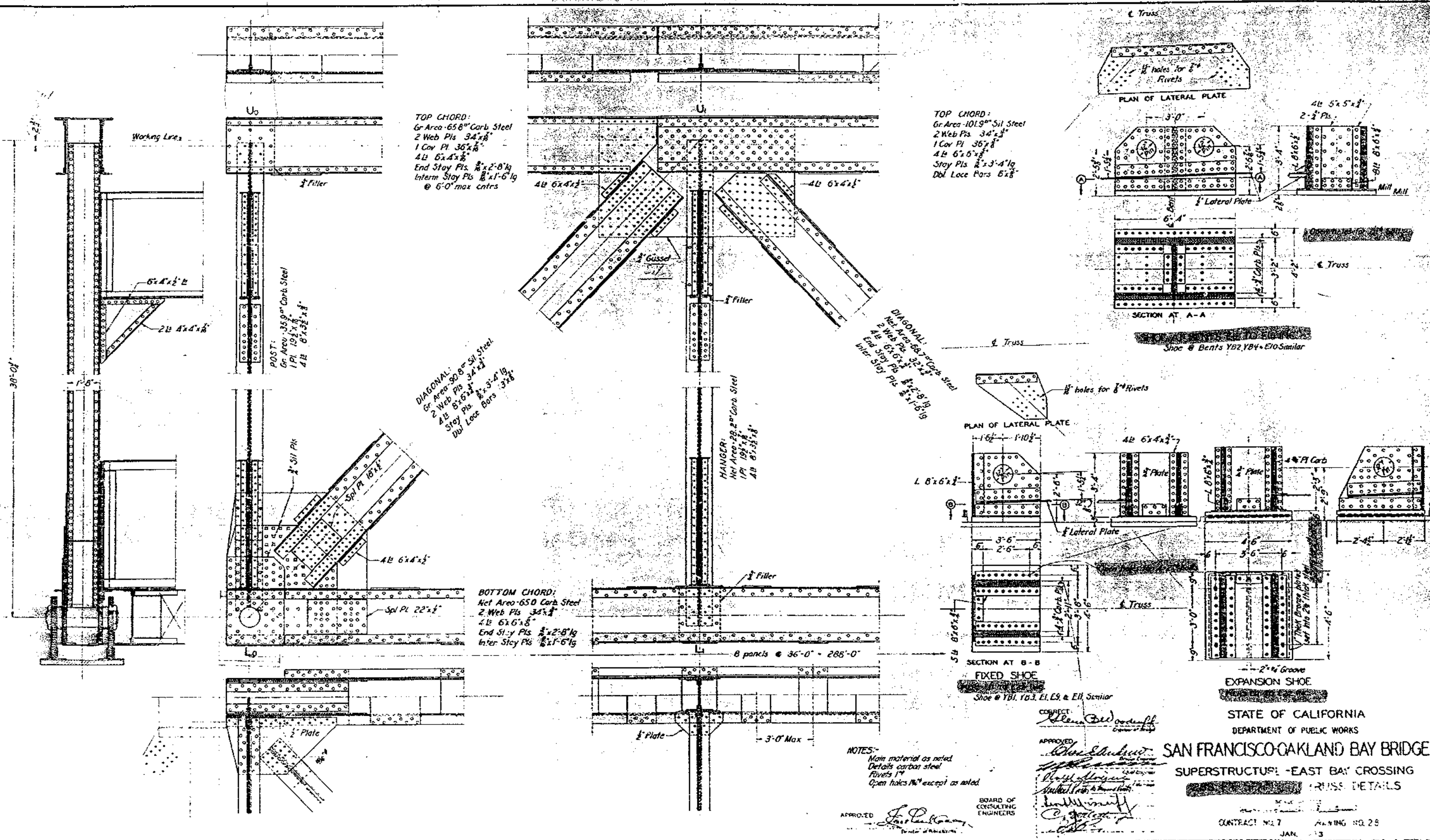
APPROVED:
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
504 FT.-SPANS
PANEL POINTS U3-U4-U5

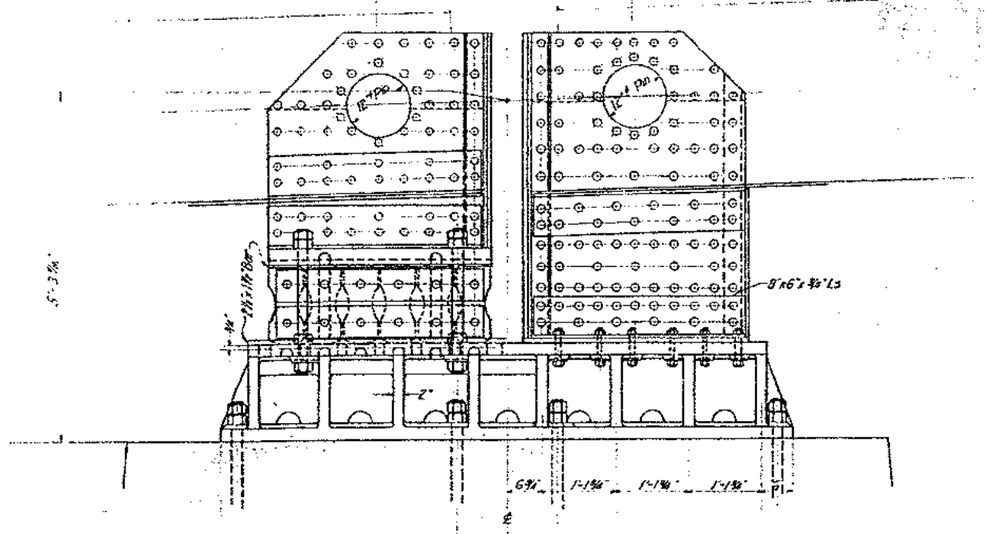
SCALE IN FEET
½ 0 1 2 3

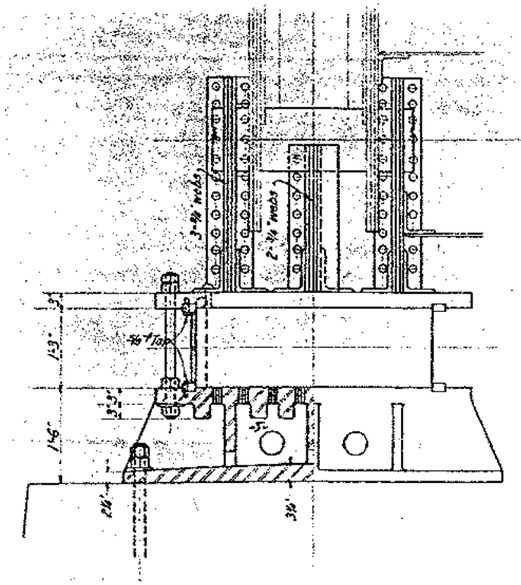
CONTRACT NO 7 DRAWING NO 27

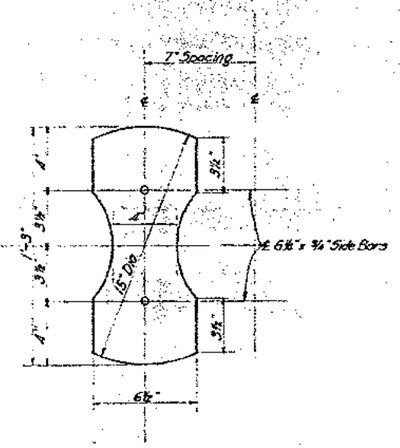
JANUARY - 1933



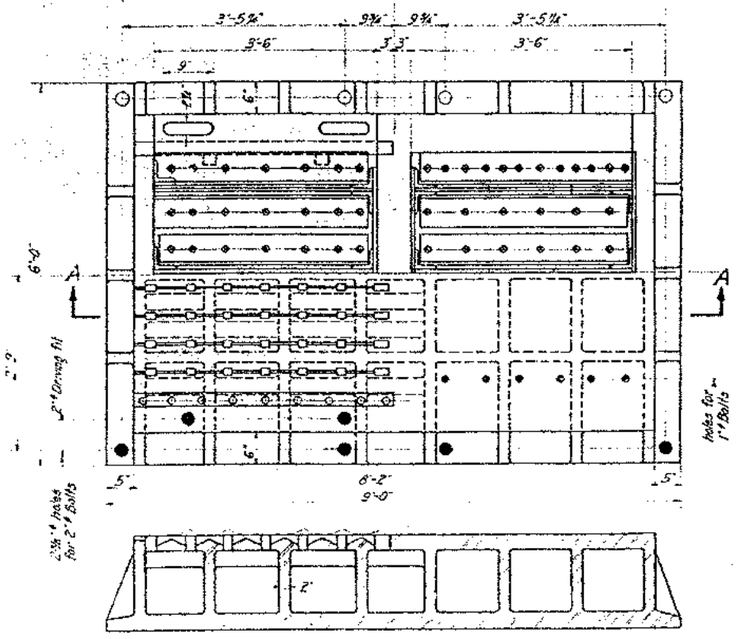
Working Line
38'-0¼"
6"x4"x½" ⅝
2 Ls 4"x4"x⅜"
U0
L0
TOP CHORD:
Gr Area 65.8"" Carb Steel
2 Web Pls 34"x⅝"
1 Cov Pl 36"x5/16"
4 Ls 6"x4"x⅝"
End Stay Pls ⅜"x2'-8" lg
Interm Stay Pls 5/16"x1'-6" lg @ 6'-0" max cntrs
⅜" Filler
POST:
Gr Area 35.9"" Carb Steel
1 Pl 19½"x⅜"
4 Ls 6"x3½"x⅜"
½" Sil Pls
Spl Pl 18"x⅝"
4 Ls 6"x4"x½"
Spl Pl 22"x½"
2" Plate
DIAGONAL:
Gr Area 90.8"" Sil Steel
2 Web Pls 34"x¾"
4 Ls 8"x6"x¾"
Stay Pls ⅜"x3'-4" lg
Dbl Lace Bars 3"x⅝"
BOTTOM CHORD:
Net Area 65.0 Carb Steel
2 Web Pls 34"x⅝"
4 Ls 6"x6"x⅝"
End Stay Pls ⅜"x2'-8" lg
Inter Stay Pls 5/16"x1'-6" lg
U1
L1
4 Ls 6"x4"x½"
4 Ls 6"x4"x⅜"
⅜" Gusset
⅜" Filler
HANGER:
Net Area 28.2"" Carb Steel
1 Pl 19½"x⅜"
4 Ls 6"x3½"x⅜"
8 panels @ 36'-0" = 288'-0"
½" Plate
3'-0" Max
TOP CHORD:
Gr Area 101.9"" Sil Steel
2 Web Pls 34"x¾"
1 Cov Pl 36"x⅝"
4 Ls 6"x6"x⅝"
Stay Pls ⅜"x3'-4" lg
Dbl Lace Bars 6"x⅝"
DIAGONAL:
Net Area 68.7"" Carb Steel
2 Web Pls 32"x⅝"
4 Ls 6"x6"x⅝"
End Stay Pls ⅜"x2'-8" lg
Inter Stay Pls ⅜"x1'-6" lg
℄ Truss
13/16" holes for ⅞" Rivets
PLAN OF LATERAL PLATE
4 Ls 5"x5"x⅜"
2-½" Pls
3'-0"
¾" Lateral Plate
Mill
6'-4"
℄ Truss
SECTION AT A-A
[redacted]
Shoe @ Bents YB2, YB4 & E10 Similar
℄ Truss
13/16" holes for ⅞" Rivets
PLAN OF LATERAL PLATE
L 8"x6"x½"
4 Ls 6"x4"x¾"
4" Pl Carb
¾" Lateral Plate
3'-6"
2'-6"
4'-6"
℄ Truss
SECTION AT B-B
FIXED SHOE
[redacted]
Shoe @ YB1, YB3, E1, E5, & E11 Similar
2"x¼" Groove
EXPANSION SHOE
[redacted]
NOTES:-
Main material as noted.
Details carbon steel
Rivets 1"
Open holes 1⅛" except as noted.
CORRECT:
APPROVED:
APPROVED
BOARD OF CONSULTING ENGINEERS
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE - EAST BAY CROSSING
[redacted] TRUSS DETAILS
CONTRACT No. 7
DRAWING No. 28



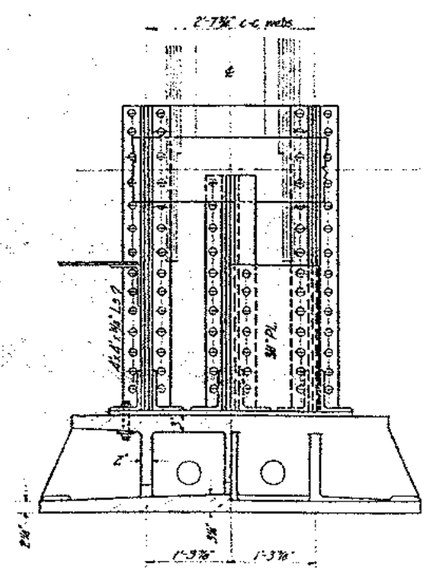




ROLLER DETAILS



SECTION A-A



Note:
Material: Structural shapes of carbon steel
Castings of annealed cast steel
Rollers to be forged
1" Rivets

CORRECT:

APPROVED:

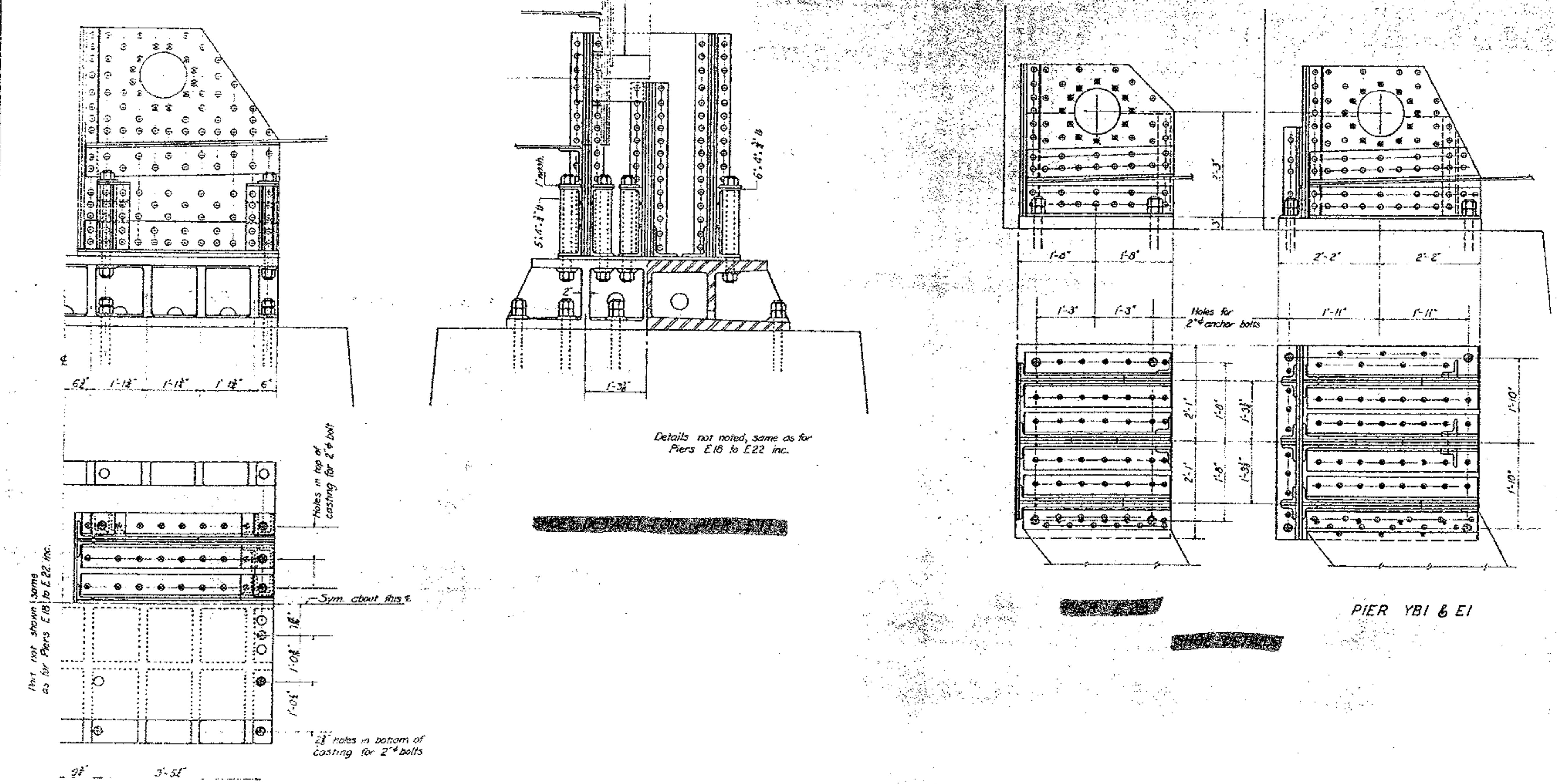
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
[redacted]

SCALE IN FEET
0 1 2

CONTRACT NO 7 SUP DRAWING NO 28A
JULY — 1933

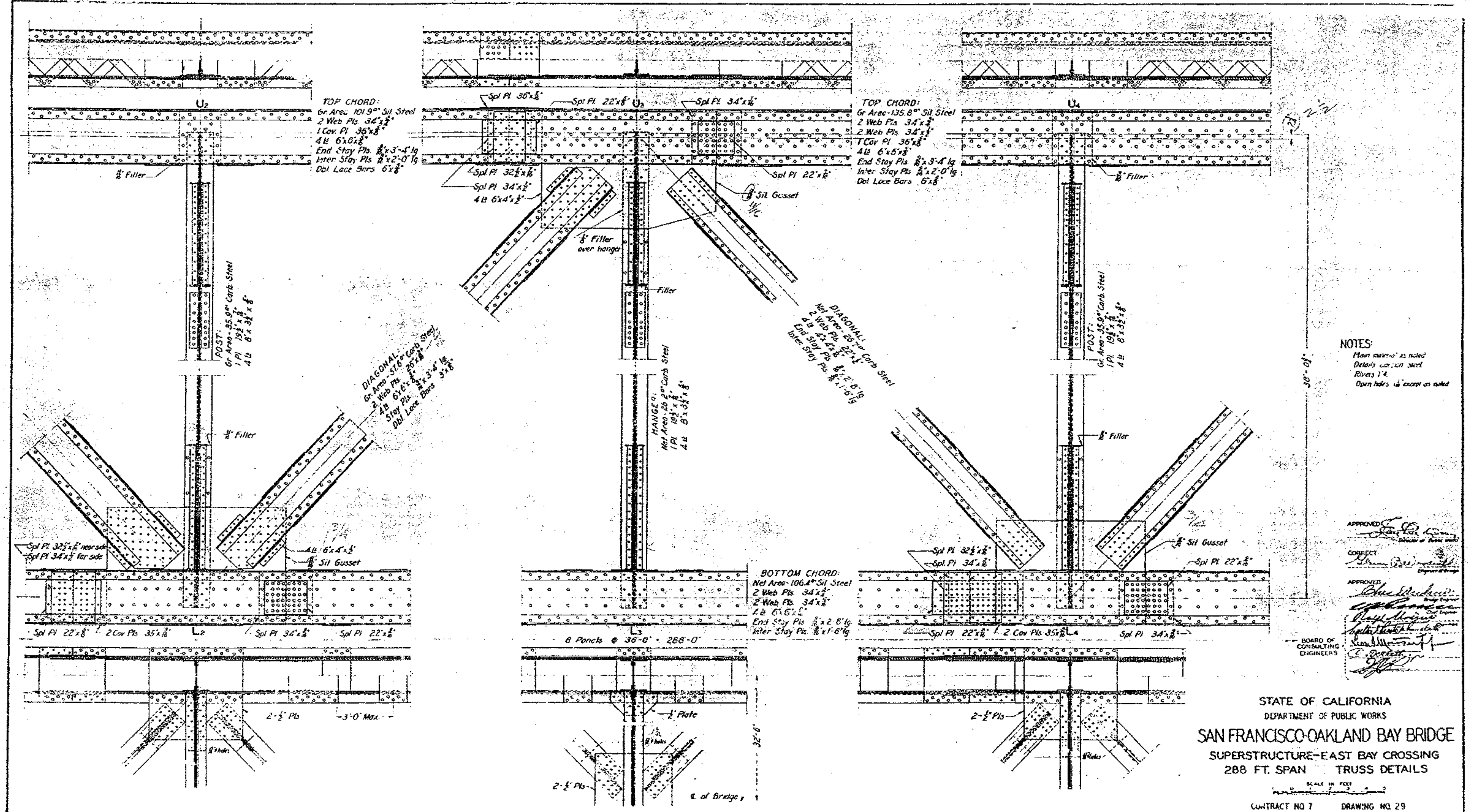
[redacted]



Note: Except as noted all structural material is ⅞" car steel.
1"φ rivets.
Castings are of annealed cast steel.

CORRECT
APPROVED
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
SHOE DETAILS
SCALE IN FEET
CONTRACT NO 7 SUP. DRAWING NO 266
JANUARY - 1933



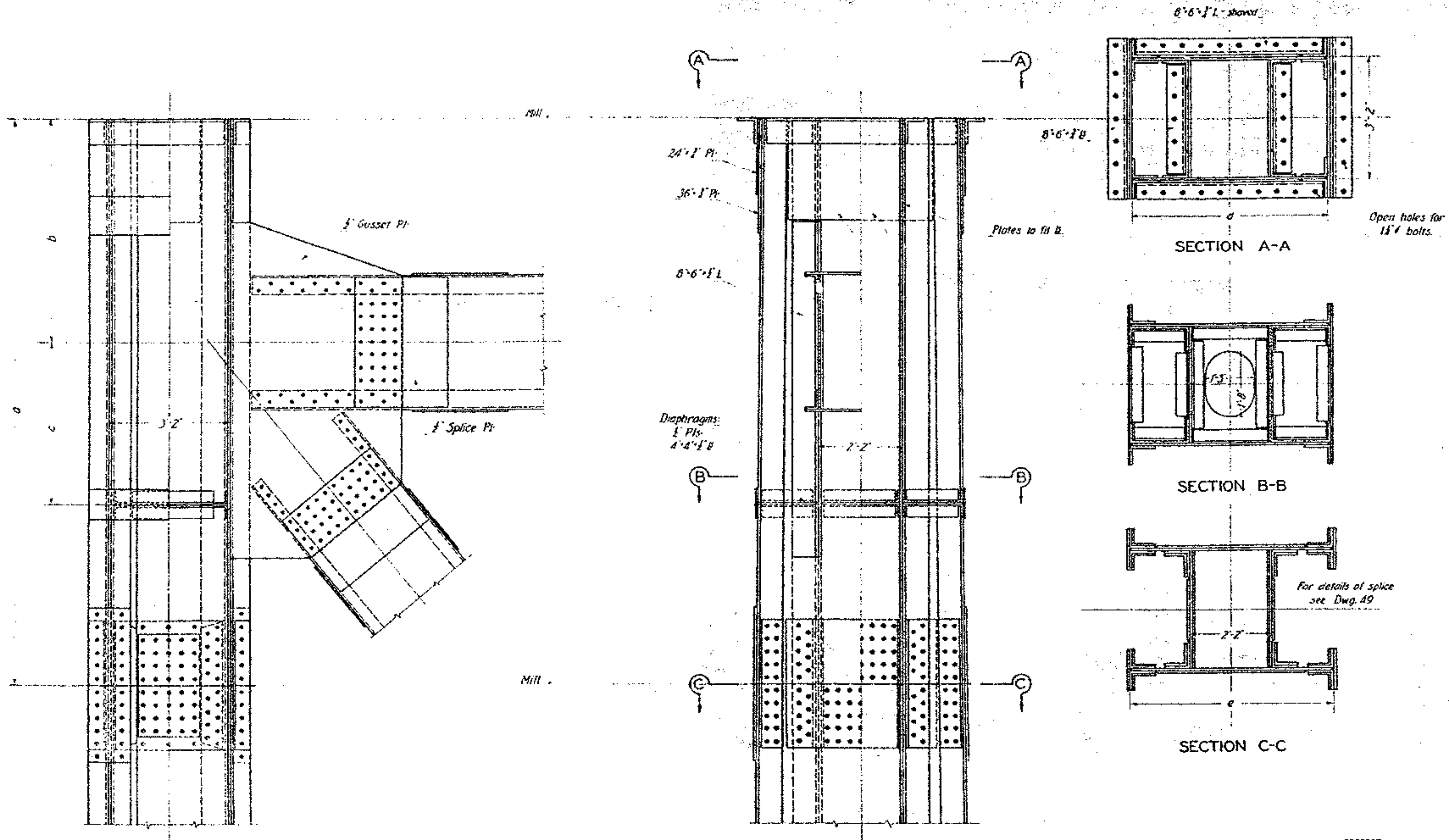
NOTES:
Main material as noted
Details carbon steel
Rivets 7/8"
Open holes 15/16" except as noted

APPROVED [signature] Director of Public Works
CORRECT [signature] Engineer of Bridges
APPROVED [signature] Bridge Engineer
[signatures]
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
288 FT. SPAN TRUSS DETAILS

SCALE IN FEET

CONTRACT NO. 7 DRAWING NO. 29
JAN. 1933



HALF ELEVATION HALF SECTION ON ℄

HALF ELEVATION HALF SECTION ON ℄

DIMENSIONS				
	YB2	YB4	NO10	NO12
a	24'-9¼"	19'-5⅞"	14'-7⅝"	26'-7⅛"
b	5'-3¼"	5'-11⅞"	5'-7"	5'-9"
c	4'-6"±	0'-0"±	4'-0"±	8'-0"±
d	4'-11⅛"	4'-6¼"	5'-1⅛"	4'-9⅜"
e	5'-4"	4'-10"	5'-4"	5'-6"

NOTES:

Material: Columns - YB2 & YB4, Carbon Steel. Nos 10 & 12, Silicon Steel.
Braces - Carbon Steel.

Rivets: Columns - 1⅛"
Braces - ⅞"

CORRECT.
Glenn B. Woodruff

APPROVED

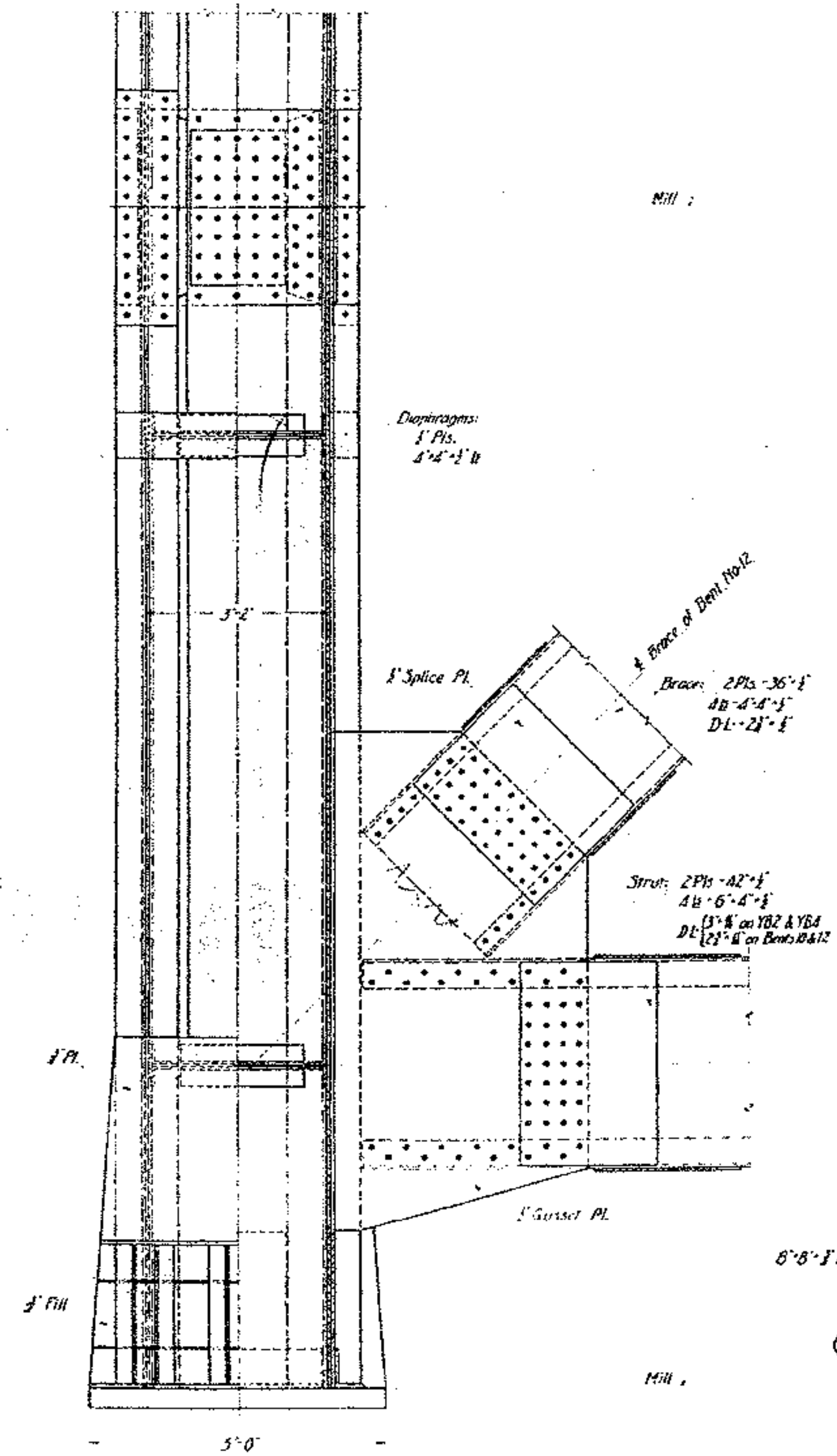
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
BENTS YB2, YB4, E10 & E12 TO E16 INC
DETAILS OF CAP

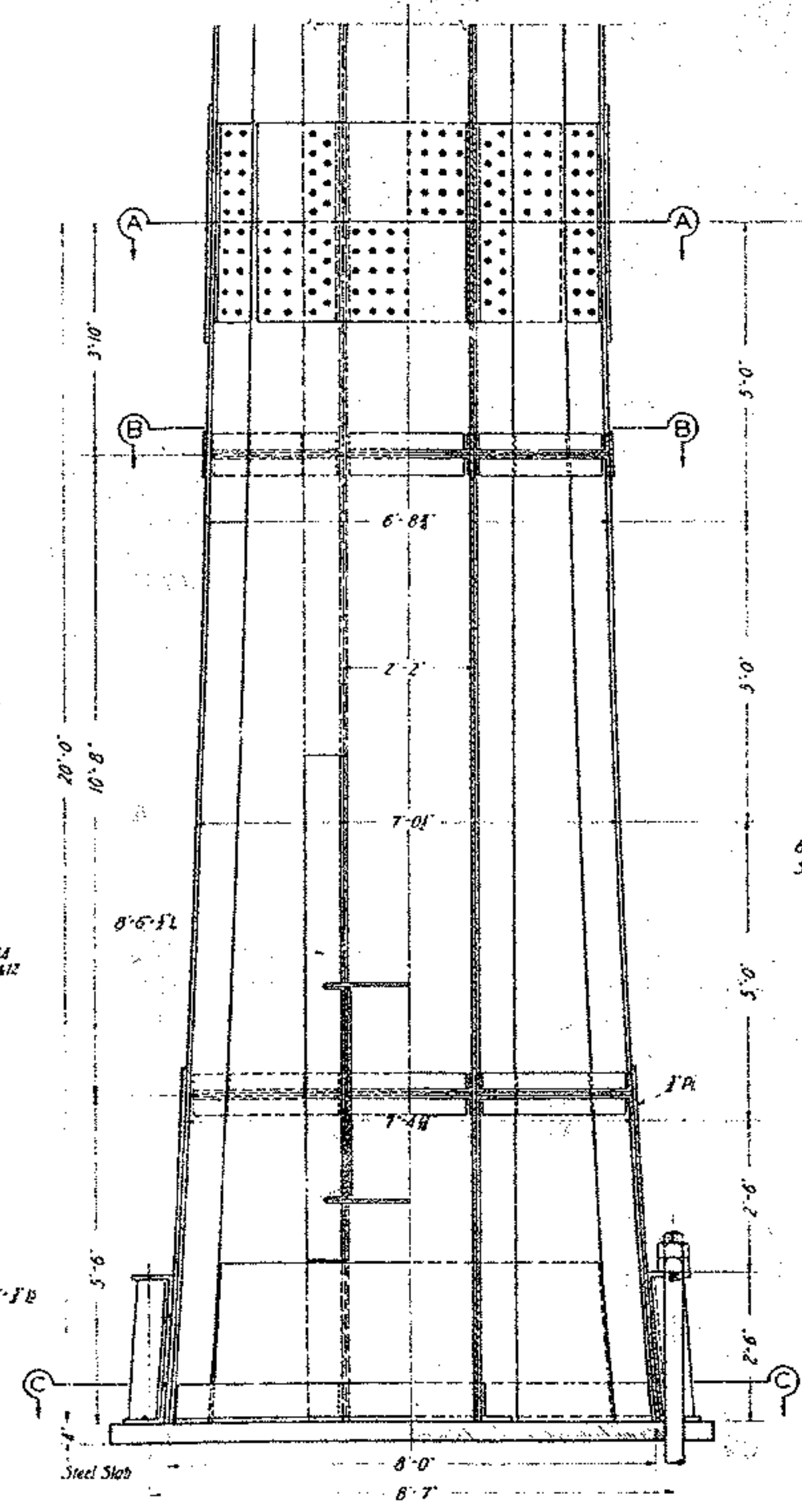
SCALE IN FEET

CONTRACT NO 7 DRAWING NO 30

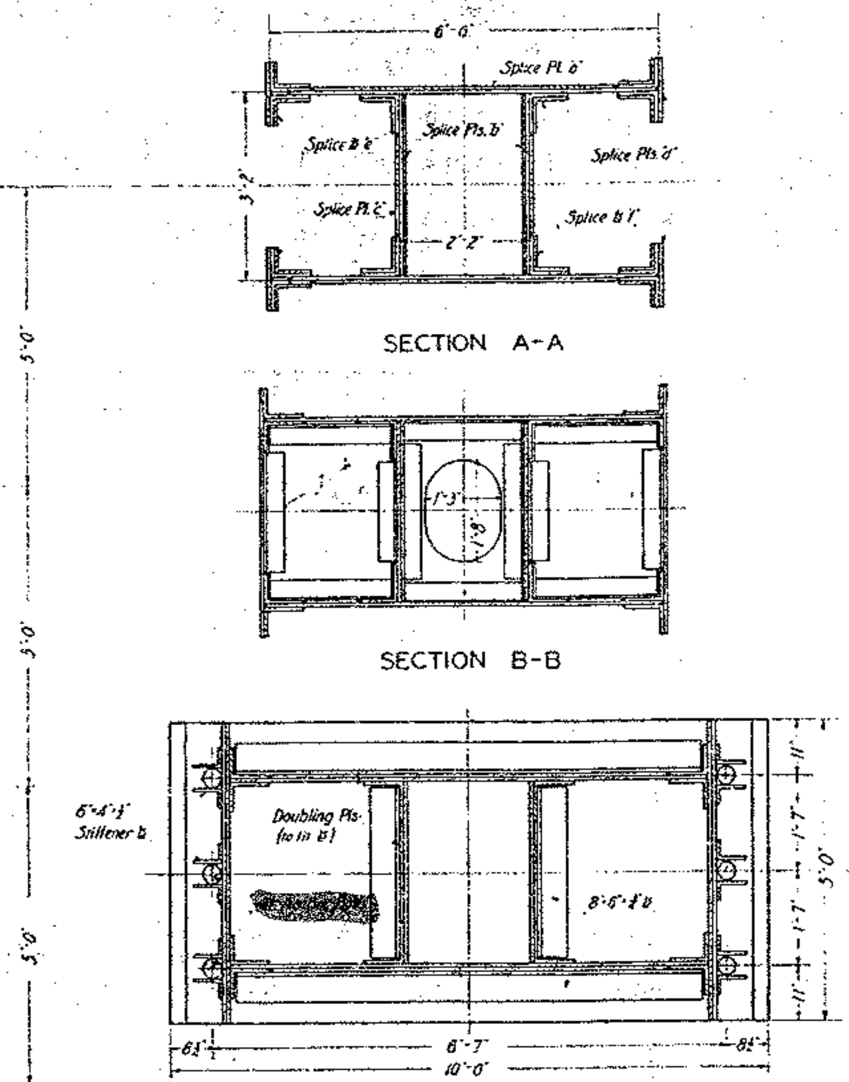
JANUARY - 1933



HALF ELEVATION HALF SECTION ON ℄



HALF ELEVATION HALF SECTION ON ℄



SECTION A-A

SECTION B-B

SECTION C-C

MATERIAL FOR COLUMNS			
	YB2 & YB4	NO 10	NO 12
2 Pls. - Tapered 7'-11[illegible] to 6'-5[illegible]	[illegible] thick	[illegible] thick	[illegible] thick
2 Pls. - 36" wide	[illegible] "	[illegible] "	[illegible] "
8 Ls - 8"x6"	[illegible] "	[illegible] "	[illegible] "
4 Ls - 8"x8"	[illegible] "	[illegible] "	[illegible] "
2 Pls. - 20" wide (a[illegible])	—	—	[illegible] "

MATERIAL FOR SPLICES			
	YB2 & YB4	NO 10	NO 12
Plate 'a'	[illegible] thick	[illegible] thick	[illegible] thick
Plate 'b'	[illegible] "	[illegible] "	[illegible] "
Plate 'c'	[illegible] "	[illegible] "	[illegible] "
Plate 'd'	[illegible] "	[illegible] "	[illegible] "
Angle 'e'	[illegible]	[illegible]	[illegible]
Angle 'f'	[illegible]	[illegible]	[illegible]

NOTES:

Material: Columns - YB2 & YB4, Carbon Steel.
Nos. 10 & 12, Silicon Steel.
Bracing - Carbon Steel.

Rivets: Columns - 1" ⌀
Bracing - [illegible]" ⌀

CORRECT: Glenn B. Woodruff, Engineer of Design

APPROVED: Chas. E. Andrew, Bridge Engineer

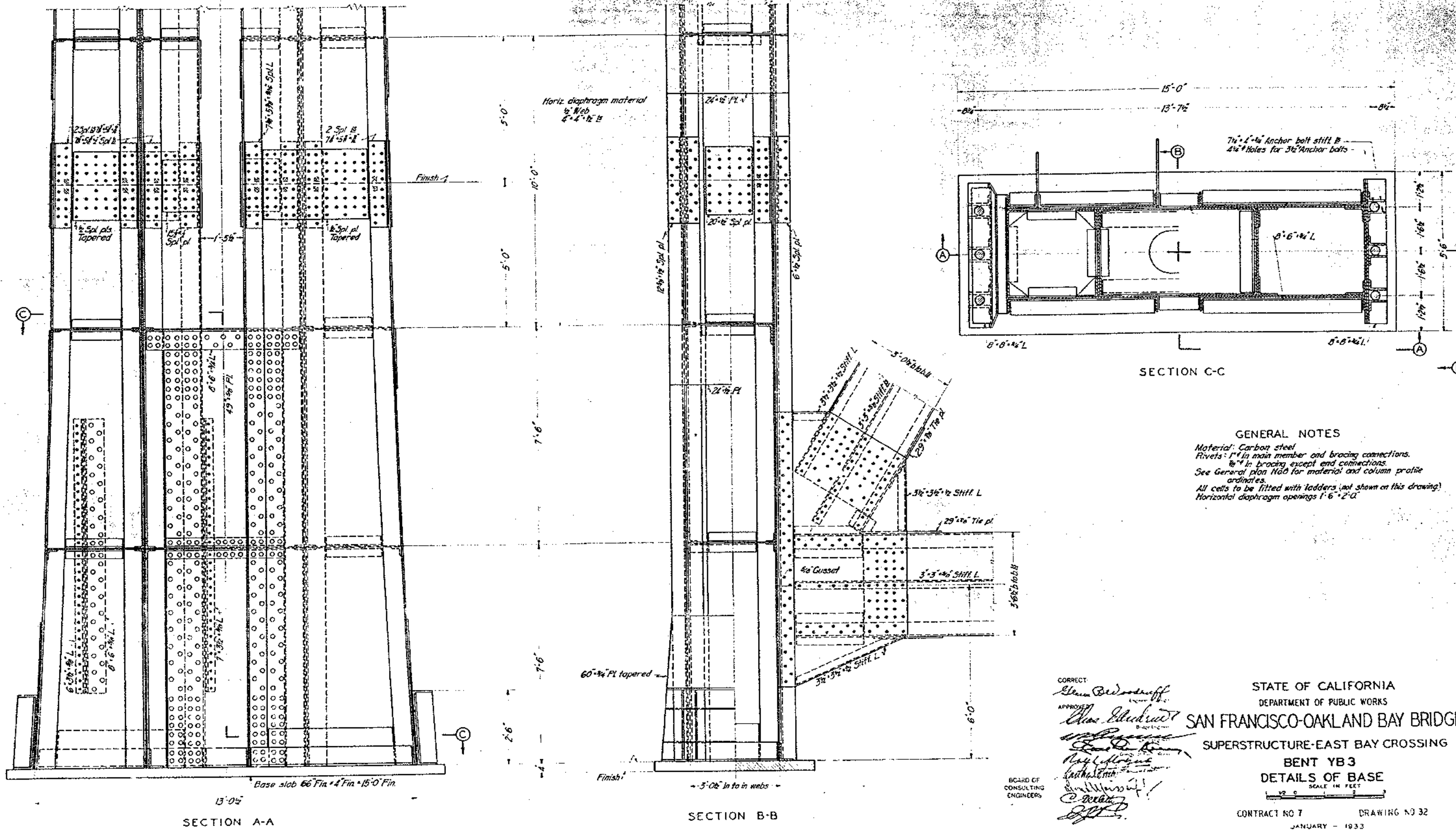
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
BENTS YB2, YB4, E10 & E12
DETAILS OF BASE

SCALE IN FEET

CONTRACT NO 7 DRAWING NO 31

JANUARY 1933



GENERAL NOTES

Material: Carbon steel
Rivets: 1"⌀ in main member and bracing connections.
⅞"⌀ in bracing except end connections.
See General plan No. 8 for material and column profile ordinates.
All cells to be fitted with ladders (not shown on this drawing)
Horizontal diaphragm openings 1'-6"×2'-0"

CORRECT: Glenn B. Woodruff
APPROVED: Chas. E. Andrew, Bridge Engineer

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

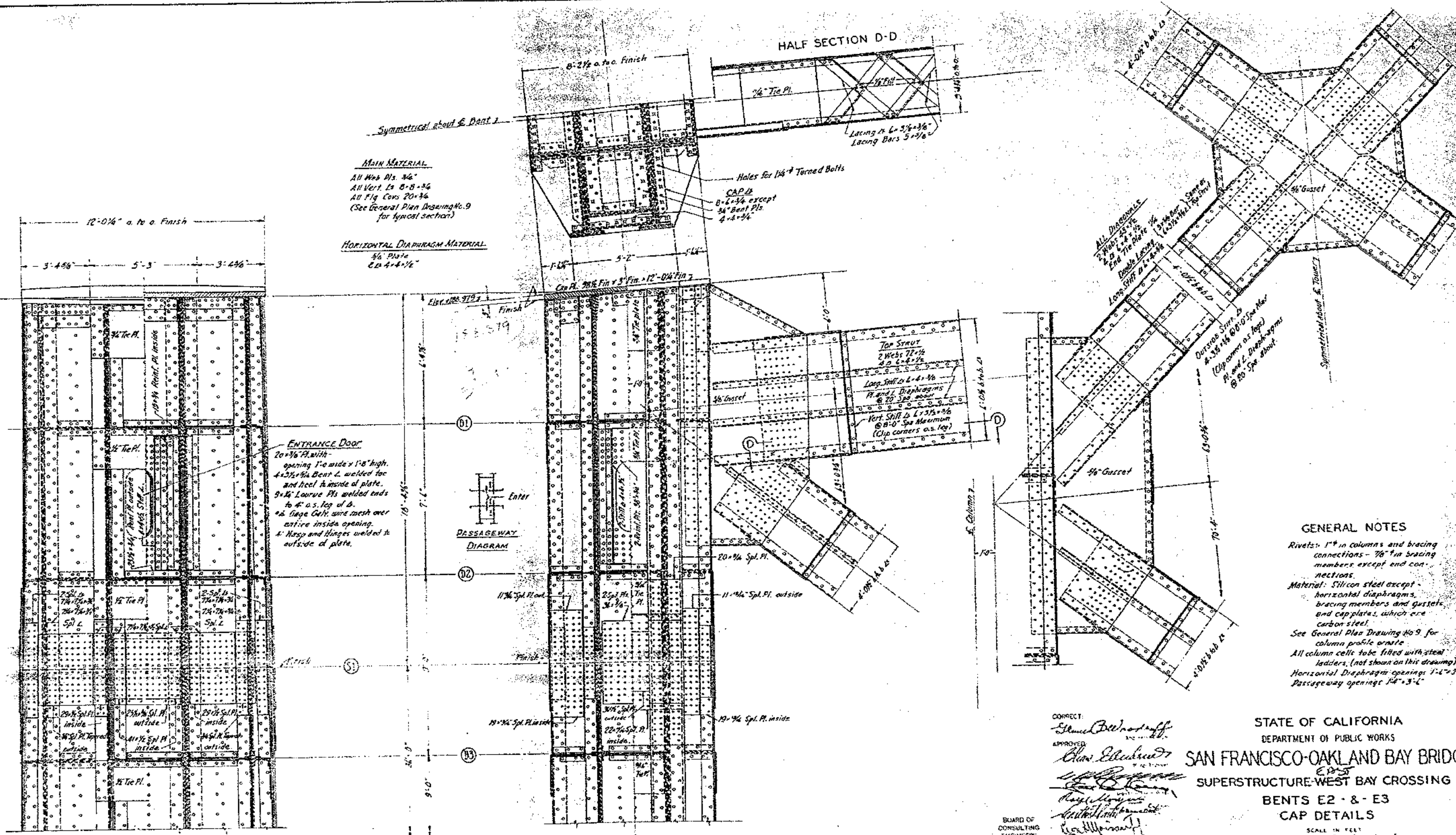
BENT YB3

DETAILS OF BASE

SCALE IN FEET

CONTRACT NO 7 DRAWING NO 32

JANUARY - 1933



GENERAL NOTES

Rivets: 1" ⌀ in columns and bracing connections – ⅞" ⌀ in bracing members except end connections.

Material: Silicon steel except – horizontal diaphragms, bracing members and gussets, and cap plates, which are carbon steel.

See General Plan Drawing No. 9 for column profile ornate.

All column cells to be filled with steel ladders. (not shown on this drawing)

Horizontal Diaphragm openings 1'-6" × 2'-0"

Passageway openings 1'-4" × 3'-6"

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE ~~WEST~~ EAST BAY CROSSING

BENTS E2 - & - E3 CAP DETAILS

SCALE IN FEET

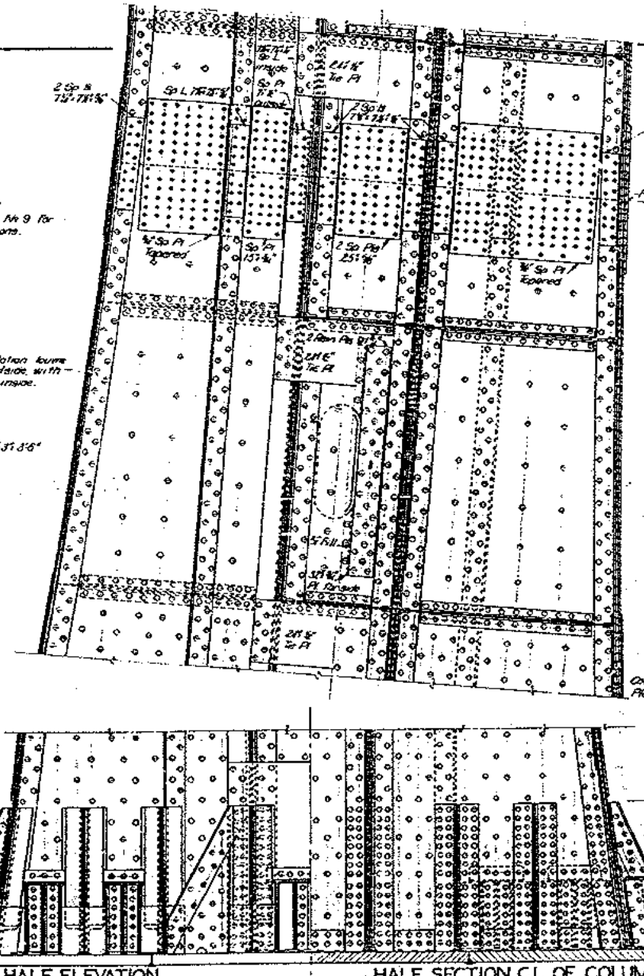
CONTRACT NO 7 DRAWING NO 33

JANUARY - 1933

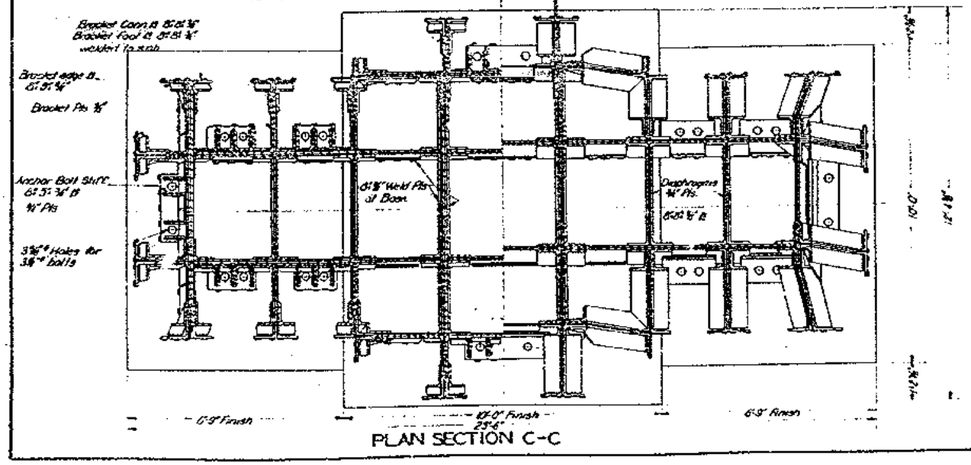
Main Material
All web plates ¾"
All vertical angles 6"x6"x⅜"
See General Plan, Drawing No 9 for typical section and dimensions.

Hinged door with ventilation louvre. Hasp for padlock on outside, with release for opening from inside.

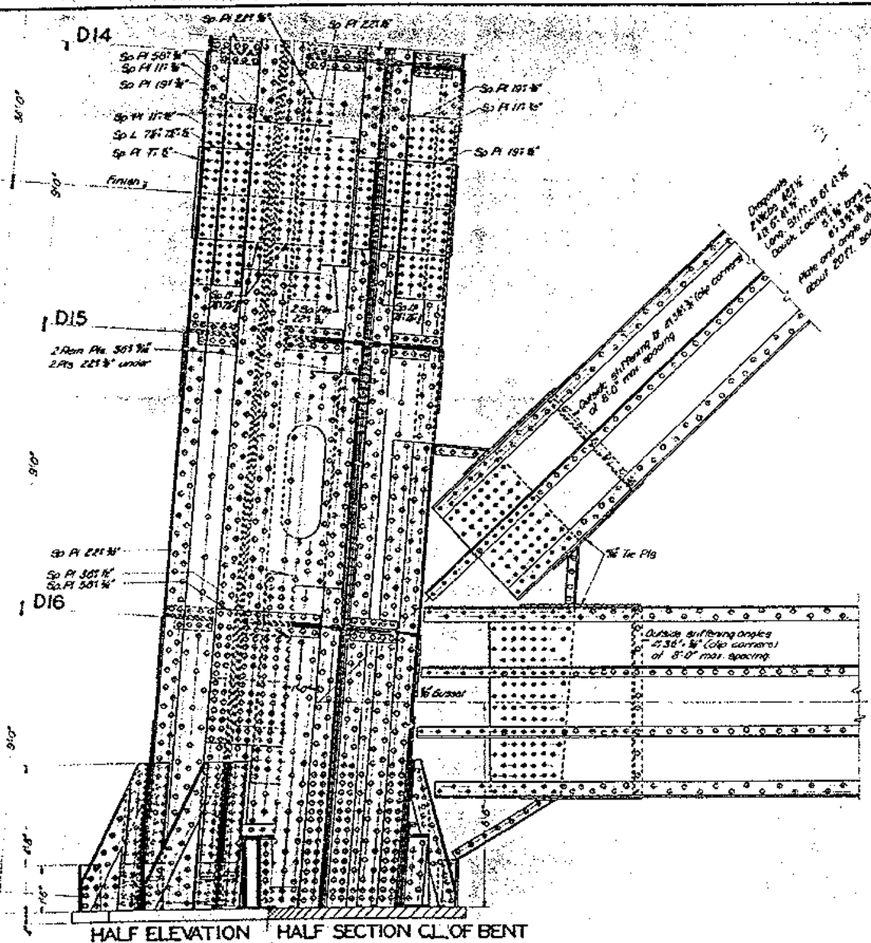
Doorway openings are 1'-3½"x3'-6"



HALF ELEVATION HALF SECTION C.L. OF COLUMN



PLAN SECTION C-C



HALF ELEVATION HALF SECTION CL. OF BENT

GENERAL NOTES

Rivets: ⅞"ø in columns and bracing connections.
⅞"ø in bracing members except end connections
Material: Silicon steel except horizontal diaphragms, bracing members and gussets, and base plate, which are carbon steel
See General Plan, Drawing No 9 for column profile ordinates.
All column cells to be filled with steel ladders.

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

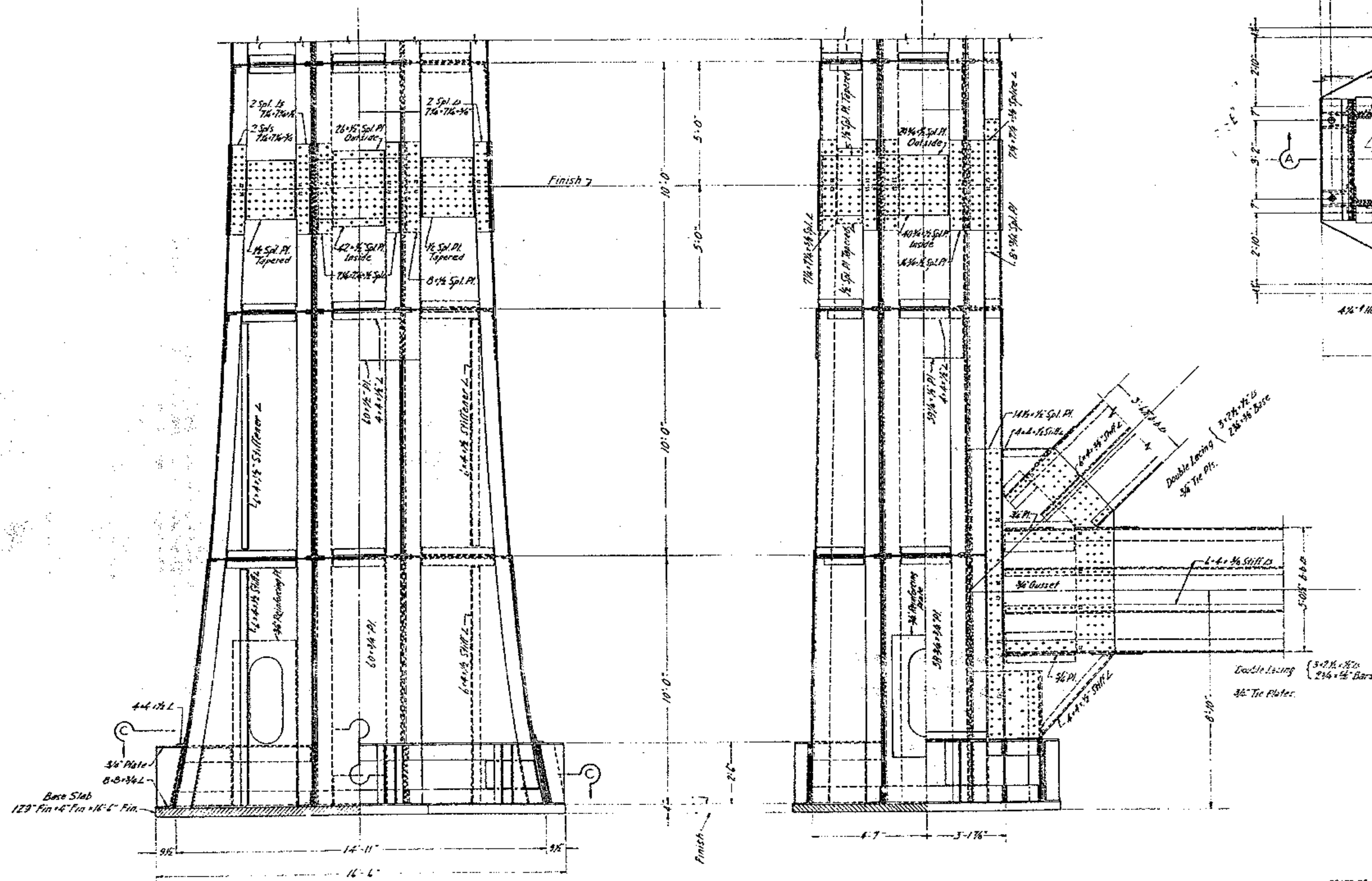
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING
BENTS E2 AND E3
BASE DETAILS

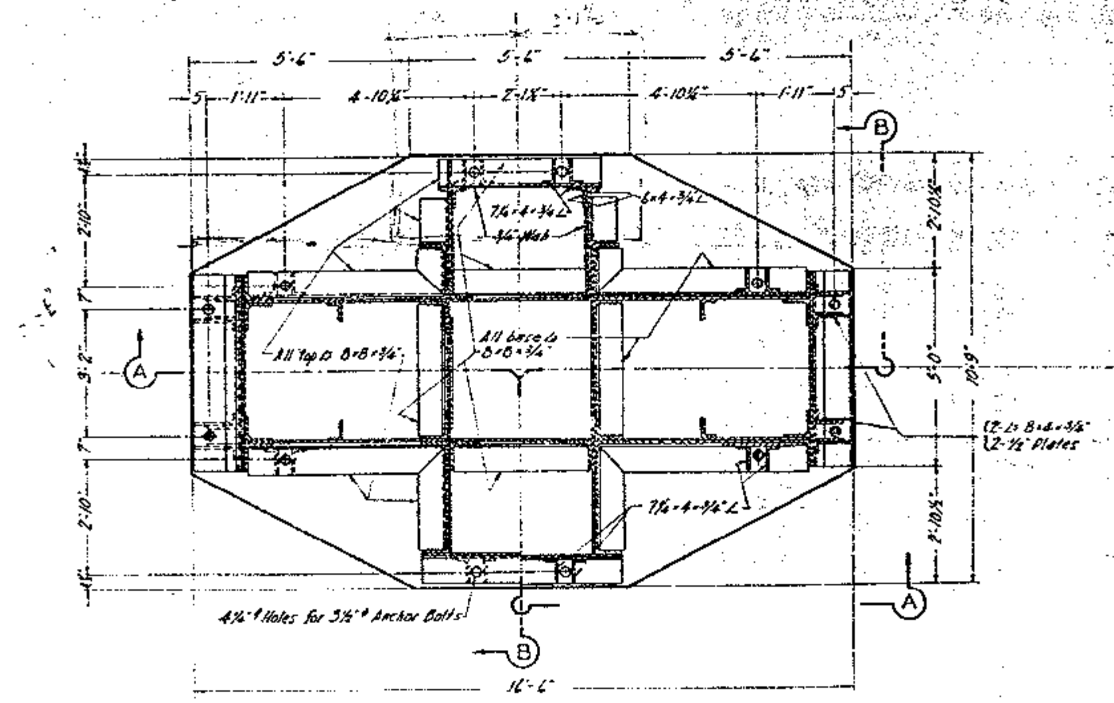
SCALE IN FEET
0 1 2 3 4 5

CONTRACT NO 7 SUP. DRAWING NO 34 A
SEPTEMBER - 1933



SECTION A-A

SECTION B-B



SECTION C-C

GENERAL NOTES

Rivets:- 1" ⌀ in column and bracing connections
7/8" ⌀ in bracing except end connections

Material:- Silicon steel except horizontal diaphragms, bracing members, and gussets which are carbon steel.
See General Plan No. 10 for material and column profile ordinates

Cells: All cells to be fitted with ladders.

Openings: Horizontal Diaphragm openings 1'-6" × 2'-0"
Passageway Door openings 1'-4" × 3'-6"

CORRECT

APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

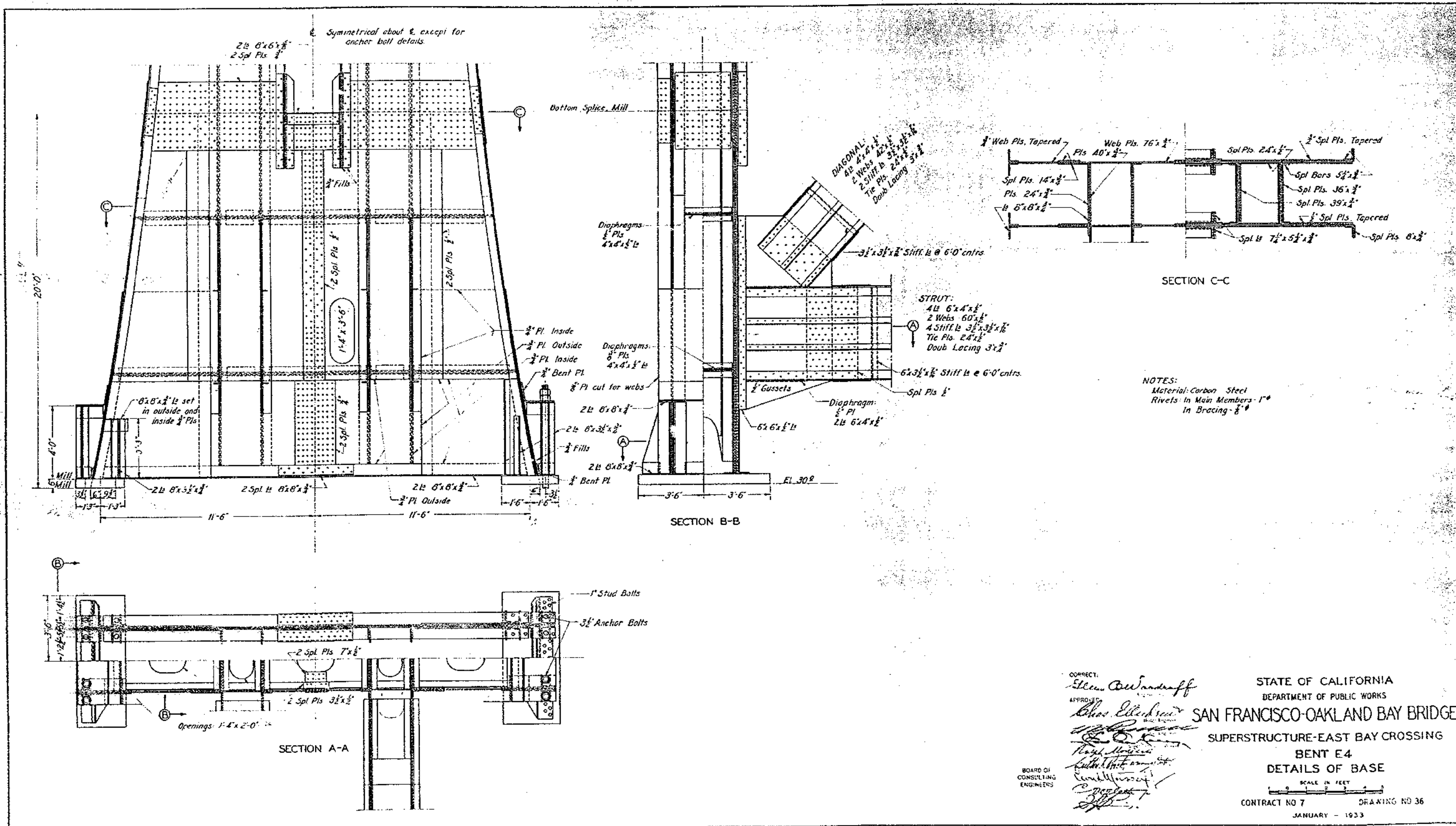
BENTS E5-E6-E7-&-E8

BASE DETAILS

SCALE IN FEET

CONTRACT NO 7 DRAWING NO. 35

JANUARY - 1933

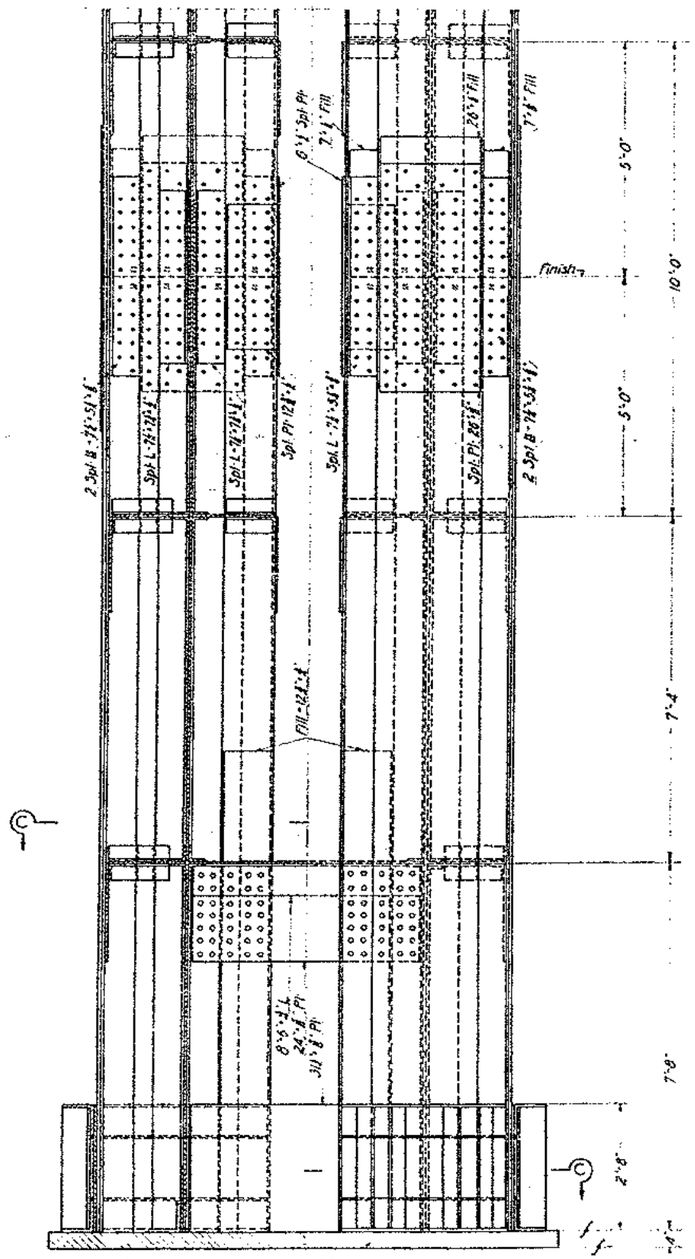


STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
BENT E4
DETAILS OF BASE

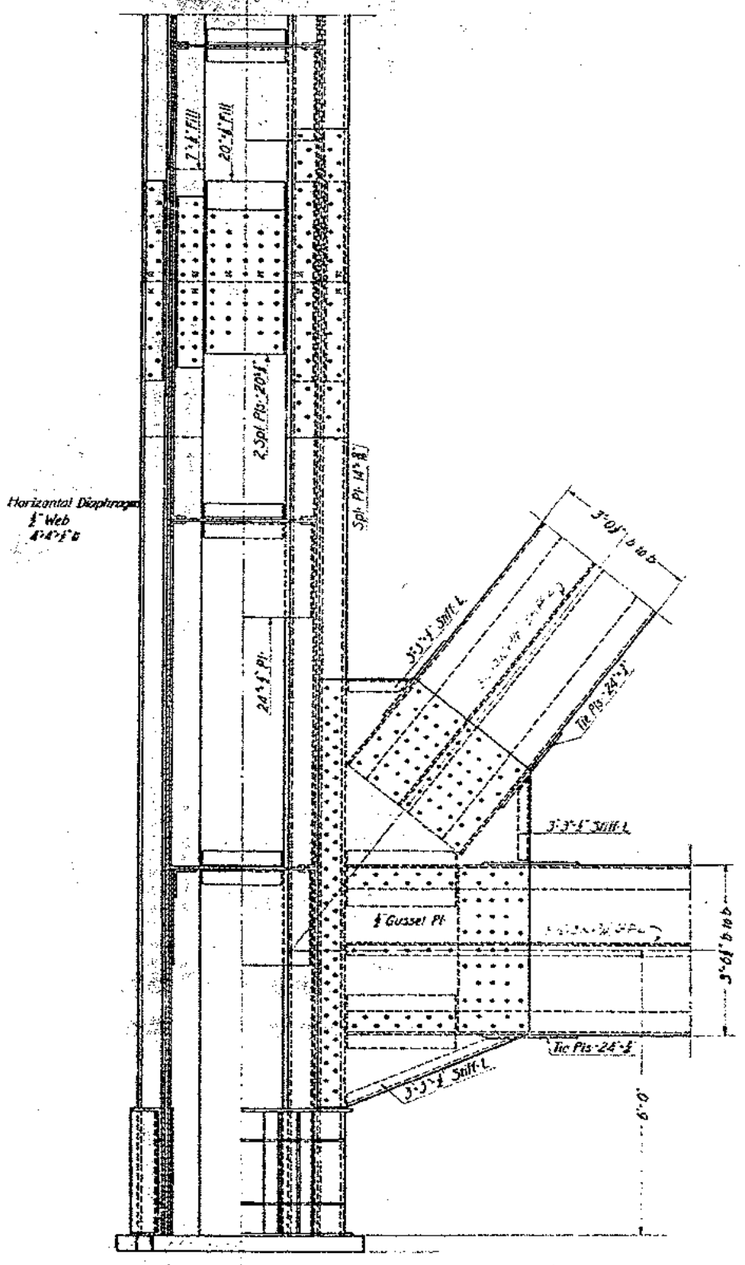
SCALE IN FEET

CORRECT:
APPROVED:
BOARD OF CONSULTING ENGINEERS

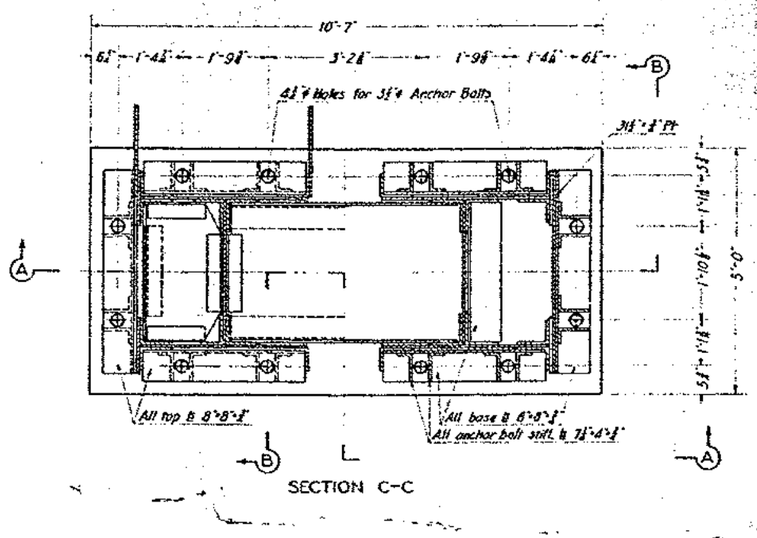
CONTRACT NO 7 DRAWING NO 36
JANUARY - 1933



SECTION A-A



SECTION B-B



SECTION C-C

GENERAL NOTES

Rivets: 1"ø in column and bracing connections.
¾"ø in bracing.

Material: Silicon steel except horizontal diaphragms, gussets and bracing.

See General Plan, Dwg. No. 8 for material and dimensions.

BOARD OF CONSULTING ENGINEERS

CORRECT:

APPROVED:

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

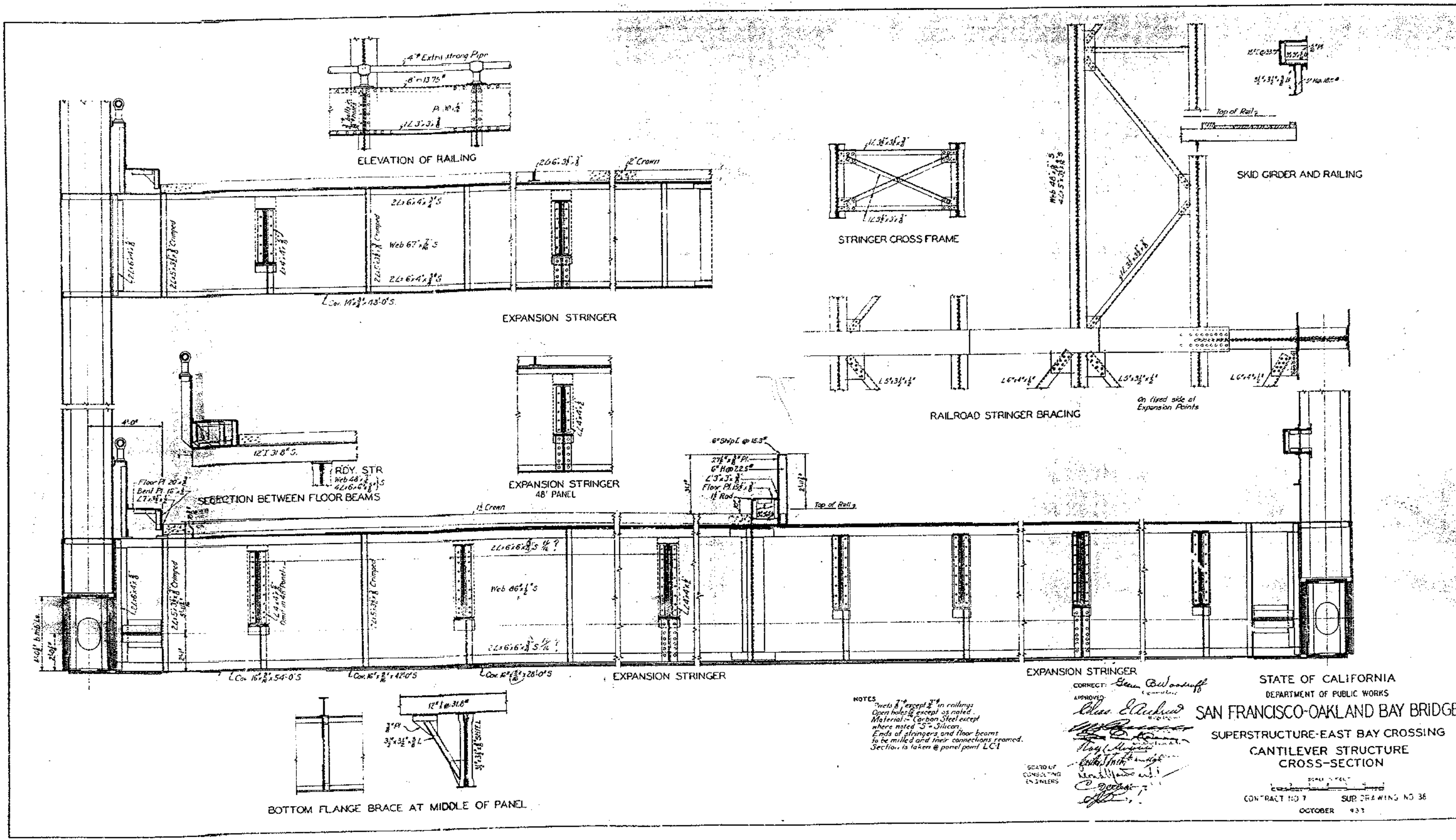
SUPERSTRUCTURE-EAST BAY CROSSING

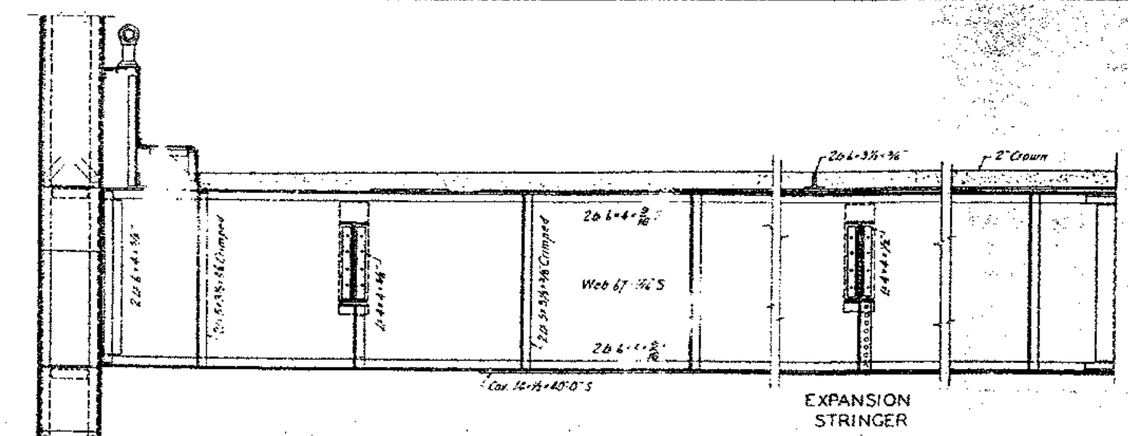
DETAILS OF BASE

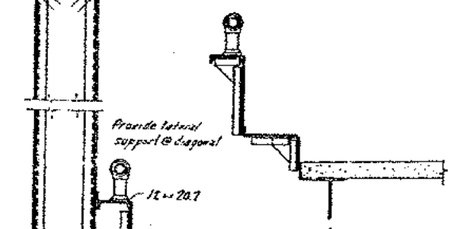
SCALE IN FEET

CONTRACT NO 7 DRAWING NO 37

JANUARY - 1933


ELEVATION OF RAILING
4" Extra strong Pipe
EXPANSION STRINGER
Web 67" x 7/16" S
STRINGER CROSS FRAME
SKID GIRDER AND RAILING
Top of Rail
RAILROAD STRINGER BRACING
On fixed side of Expansion Points
EXPANSION STRINGER
48' PANEL
SECTION BETWEEN FLOOR BEAMS
RDY. STR
12 I 31.8# S.
1" Crown
Top of Rail
Web 86" x 1/2" S
EXPANSION STRINGER
EXPANSION STRINGER
BOTTOM FLANGE BRACE AT MIDDLE OF PANEL
NOTES
Rivets 7/8" except 3/4" in railings
Open holes 15/16" except as noted.
Material:- Carbon Steel except where noted "S" = Silicon.
Ends of stringers and floor beams to be milled and their connections reamed.
Section is taken @ panel point LC1
CORRECT:
APPROVED:
BOARD OF CONSULTING ENGINEERS
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER STRUCTURE
CROSS-SECTION
CONTRACT NO 7
SUP. DRAWING NO 36
OCTOBER



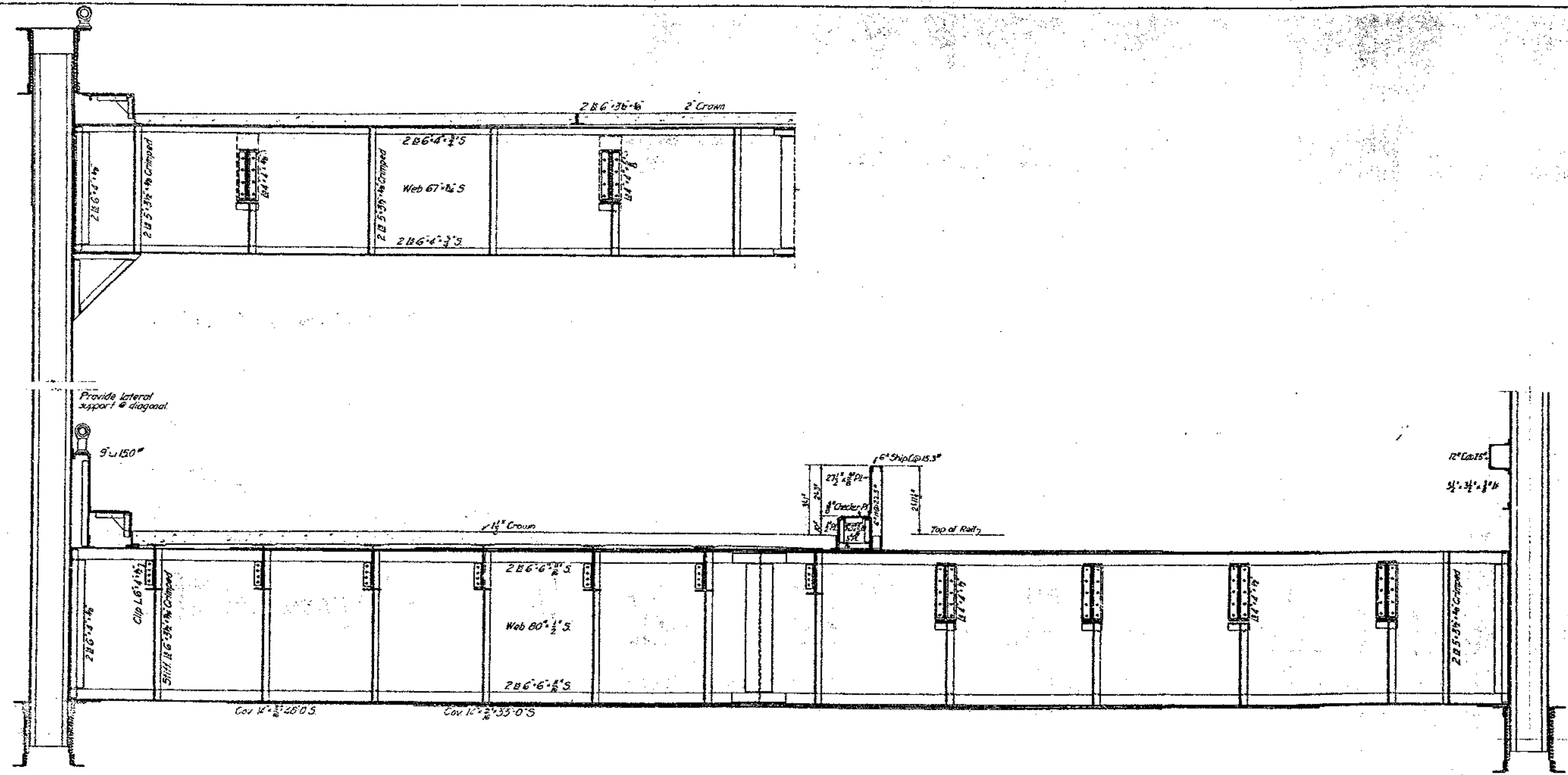


GENERAL NOTES

Rivets: ¾"ϕ except ⅞"ϕ in rail.
Open Holes 1¼"ϕ
Material Carbon steel except where noted "S" Silicon
Ends of upper deck stringers, lower deck railroad stringers and floorbeams to be milled and their connections reamed
Section taken @ panel point L6
Rivets not shown same as for Sheet 458

CORRECT
APPROVED
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
504 FT. SPANS
CROSS-SECTION
SCALE IN FEET
CONTRACT NO 7 SUPERSEDING NO 39
NOVEMBER – 1933



GENERAL NOTES

Rivets ⅞"⌀ except ¾"⌀ in railings.
Open holes 15/16"⌀.
Material · Carbon steel except where noted "S" Silicon.
Ends of upper deck stringers, lower deck railroad stringers and floor beams to be milled and their connections reamed.
Section taken @ panel point L5.
Parts not shown same as for sheet #66.

CORRECT: Glenn B. Woodruff

APPROVED: C. H. Purcell

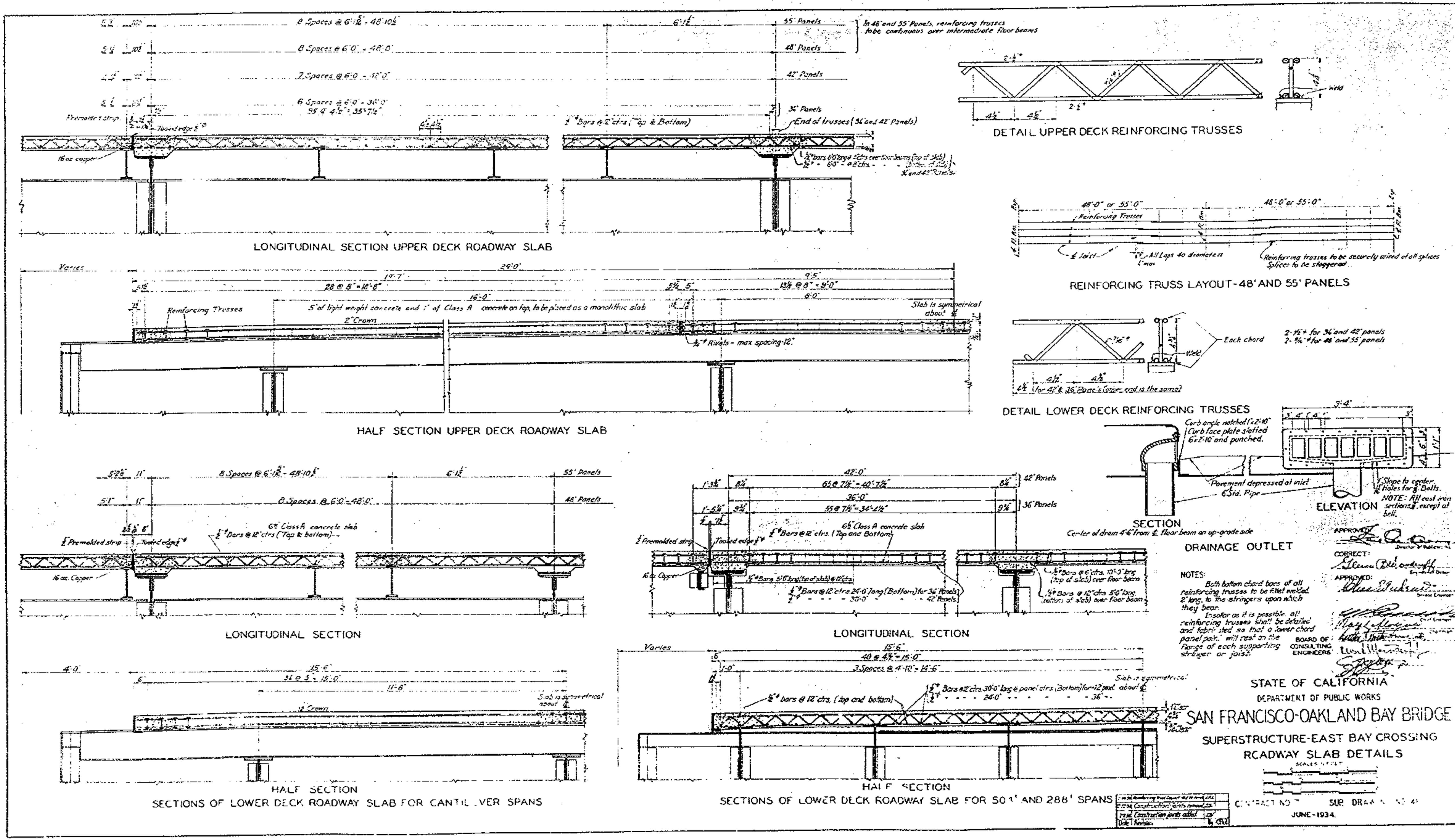
BOARD OF CONSULTING ENGINEERS

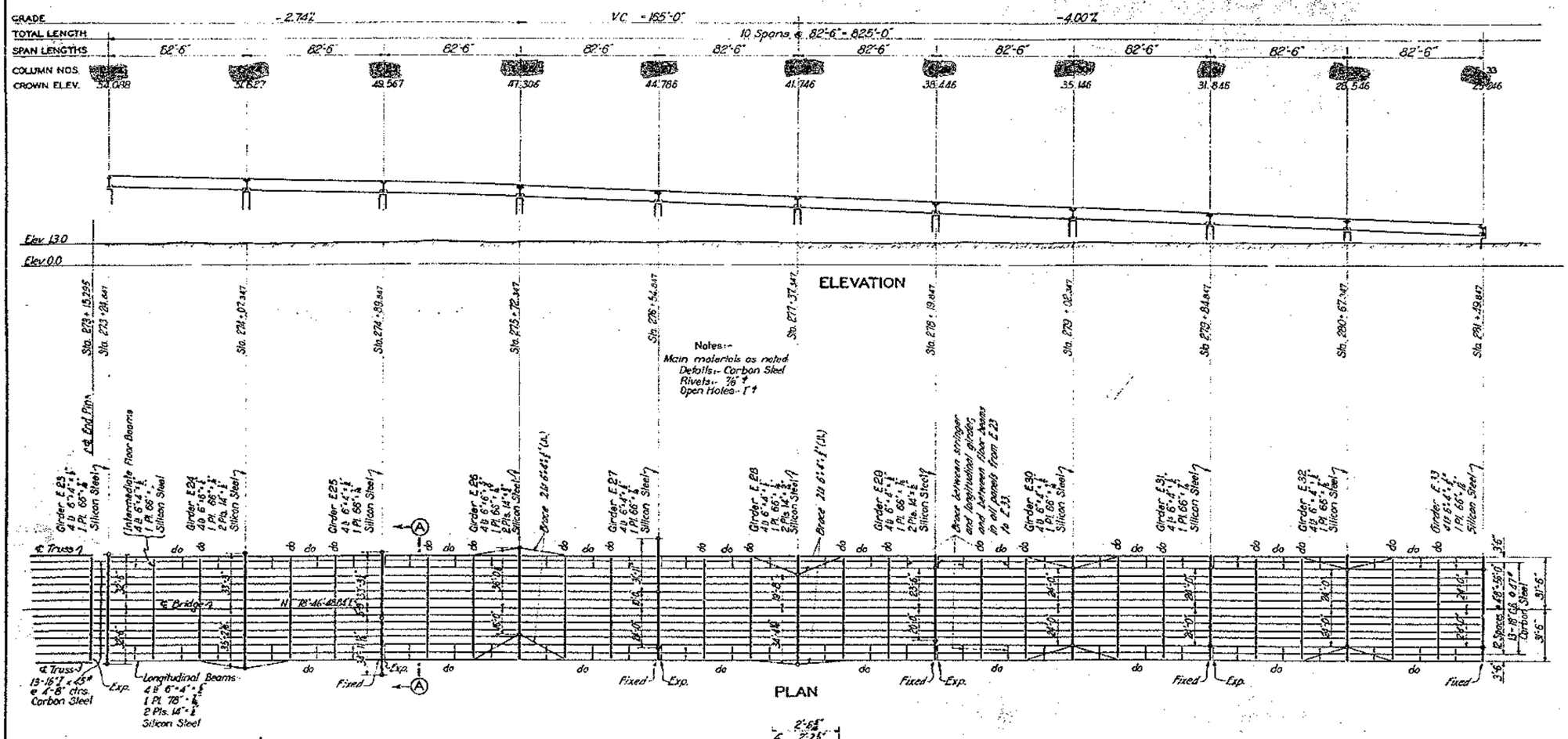
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE · EAST BAY CROSSING
[redacted]

SCALE IN FEET

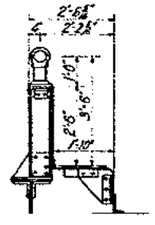
CONTRACT NO 7 SUB DRAWING NO 40

NOVEMBER - 1933

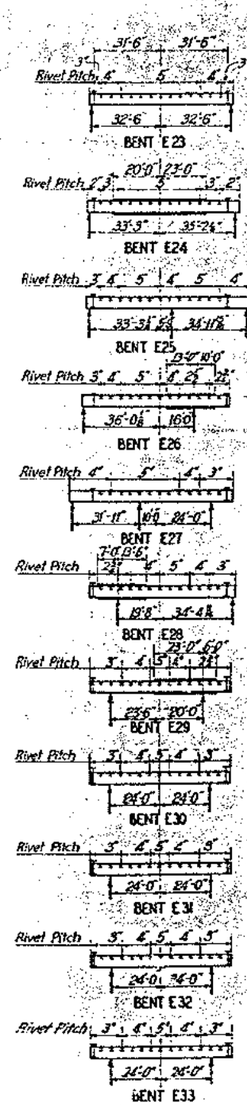

LONGITUDINAL SECTION UPPER DECK ROADWAY SLAB
HALF SECTION UPPER DECK ROADWAY SLAB
DETAIL UPPER DECK REINFORCING TRUSSES
REINFORCING TRUSS LAYOUT-48' AND 55' PANELS
DETAIL LOWER DECK REINFORCING TRUSSES
DRAINAGE OUTLET
SECTION
ELEVATION
LONGITUDINAL SECTION
LONGITUDINAL SECTION
HALF SECTION
SECTIONS OF LOWER DECK ROADWAY SLAB FOR CANTILEVER SPANS
HALF SECTION
SECTIONS OF LOWER DECK ROADWAY SLAB FOR 504' AND 288' SPANS
In 48' and 55' Panels, reinforcing trusses to be continuous over intermediate floor beams
55' Panels
48' Panels
42' Panels
34' Panels
End of trusses (34' and 42' Panels)
Premolded strip
Tooled edge
16 oz copper
5" of light weight concrete and 1" of Class A concrete on top, to be placed as a monolithic slab
Reinforcing Trusses
2" Crown
Slab is symmetrical about ℄
Rivets - max spacing 12"
Reinforcing trusses to be securely wired at all splices. Splices to be staggered
All Laps 40 diameters
Each chord
Weld
6¾" Class A concrete slab
Curb angle notched
Curb face plate slotted and punched.
Pavement depressed at inlet
Center of drain 4'6" from ℄ floor beam on up-grade side
NOTE: All cast iron sections ⅝" except at bell.
NOTES:
Both bottom chord bars of all reinforcing trusses to be fillet welded 2' long, to the stringers upon which they bear.
Insofar as it is possible all reinforcing trusses shall be detailed and fabricated so that a lower chord panel point will rest on the flange of each supporting stringer or joist.
APPROVED:
CORRECT:
APPROVED:
BOARD OF CONSULTING ENGINEERS
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
ROADWAY SLAB DETAILS
Construction joints added
Date / Revision
JUNE-1934.



BENT E 25
TYPICAL ROADWAY SECTION
SECTION A-A

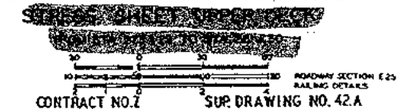


SECTION OF RAIL
FOR STEEL CURB



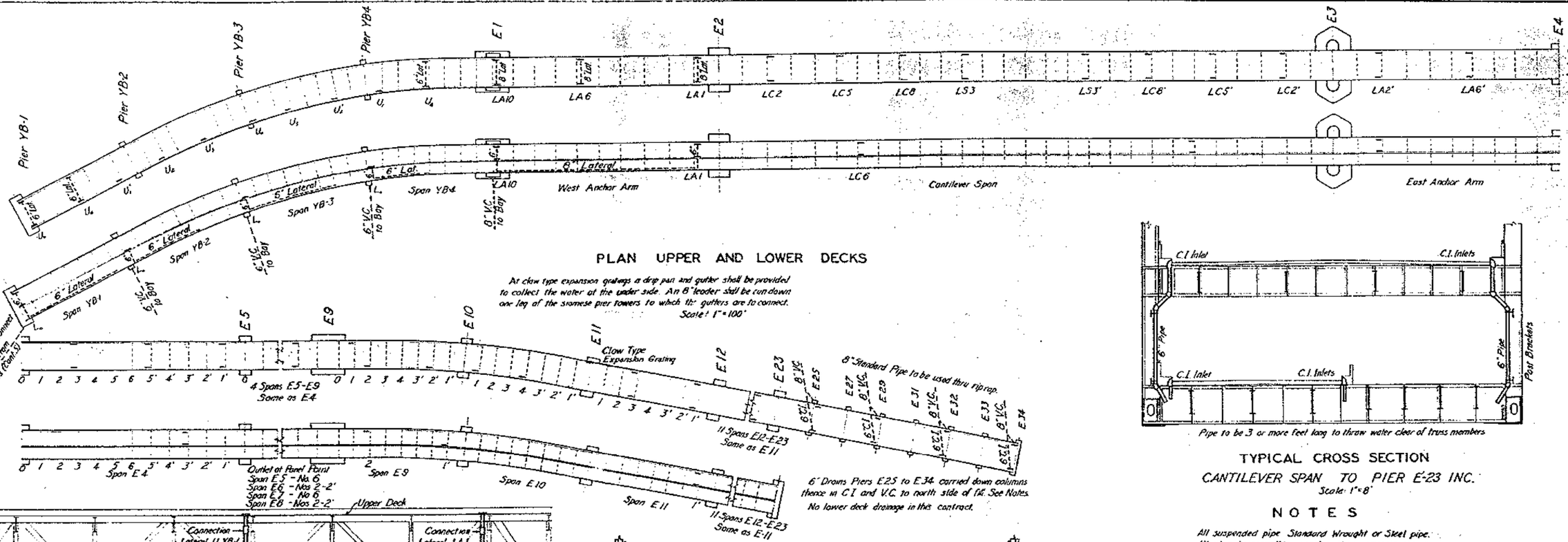
CORRECT:
APPROVED:
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE EAST BAY CROSSING



CONTRACT NO. 2
SUP. DRAWING NO. 42-A
SEPTEMBER — 1933

Revised April 30 1934
Revised Oct. 25 1933

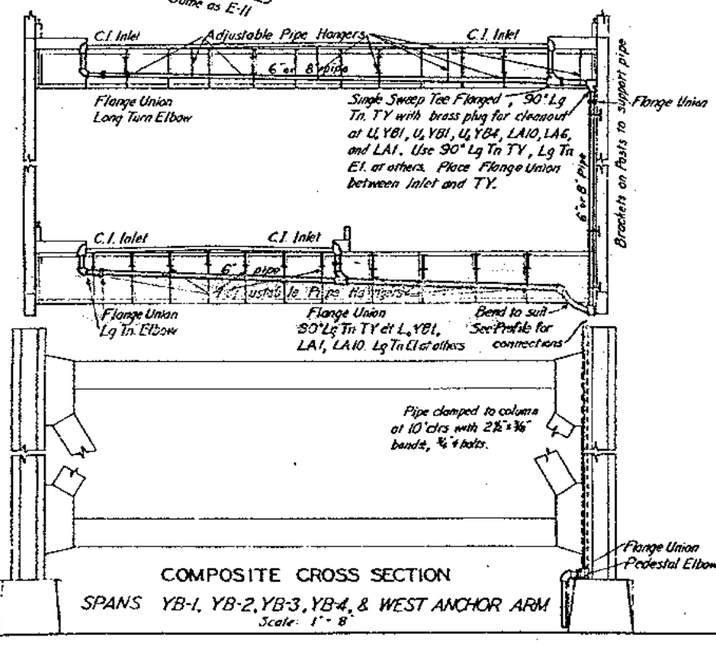


PLAN UPPER AND LOWER DECKS

At claw type expansion gratings a drip pan and gutter shall be provided to collect the water at the under side. An 8" leader shall be run down one leg of the siamese pier towers to which the gutters are to connect.

Scale: 1" = 100'

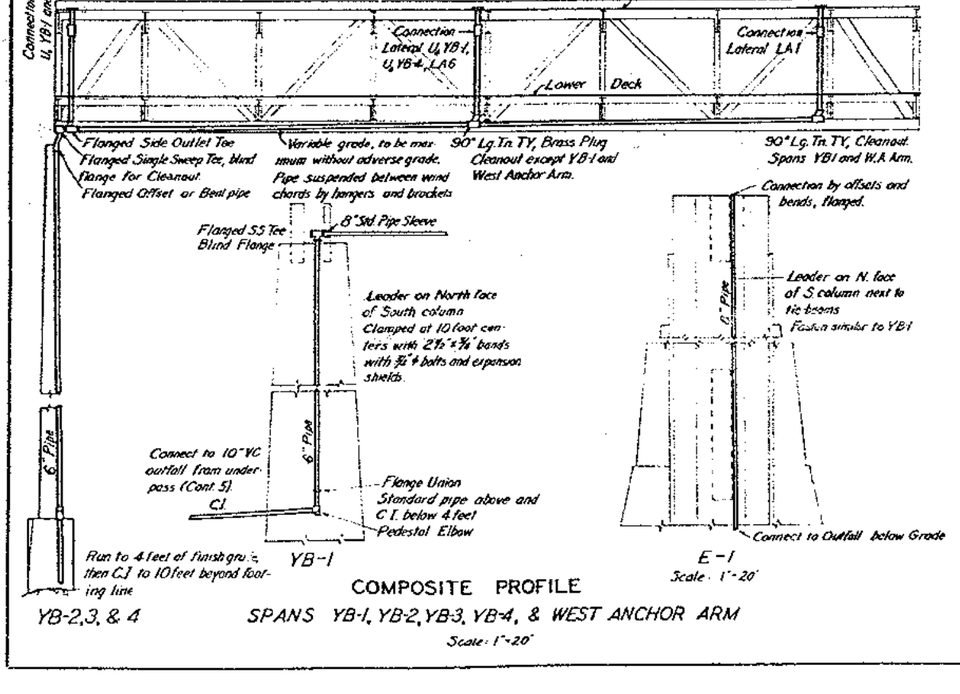
6" Drains Piers E25 to E34 carried down columns thence in C.I. and V.C. to north side of fd. See Notes. No lower deck drainage in this contract.



COMPOSITE CROSS SECTION

SPANS YB-1, YB-2, YB-3, YB-4, & WEST ANCHOR ARM

Scale: 1" = 8'



Scale: 1" = 20'

COMPOSITE PROFILE

YB-2, 3, & 4 SPANS YB-1, YB-2, YB-3, YB-4, & WEST ANCHOR ARM

Scale: 1" = 20'

Pipe to be 3 or more feet long to throw water clear of truss members.

TYPICAL CROSS SECTION

CANTILEVER SPAN TO PIER E-23 INC.

Scale: 1" = 8'

NOTES

All suspended pipe Standard Wrought or Steel pipe.

All pipe inaccessible, passing thru concrete structures or as noted, to be Class A Cast Iron, Bell and Spigot.

All fittings to be Standard Cast Iron Flanged Fittings or Cast Iron Drainage Fittings, as noted on sections, of long turn pattern.

Flanged connections are to be used where noted and may also be used at the contractors option at other points if clearances and grades are maintained.

Vitrified Clay Pipe, salt glazed will be run from a point 10 feet beyond the footing limits of YB-1, YB-2, YB-3, YB-4, and E1, E23, E-34 to the bay.

Vitrified Clay Pipe shall be laid on a smooth grade and shall have a minimum of 2 feet of cover as specified.

Class A Cast Iron Pipe to be used from a point 4 feet above finish ground to 10 feet beyond footing limits.

For detail of inlet casting see Dwg. 70.

Inlet Boxes to be located on side of Floor Beam indicated on plan and leaders carried down close to vertical truss members and bracketed to them. Use 8"-6" reducer where leader is 6".

Hangers, Brackets, Clamps are to be of Malleable Iron of standard design. Concrete inserts.

CORRECT
Glenn B. Woodruff

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

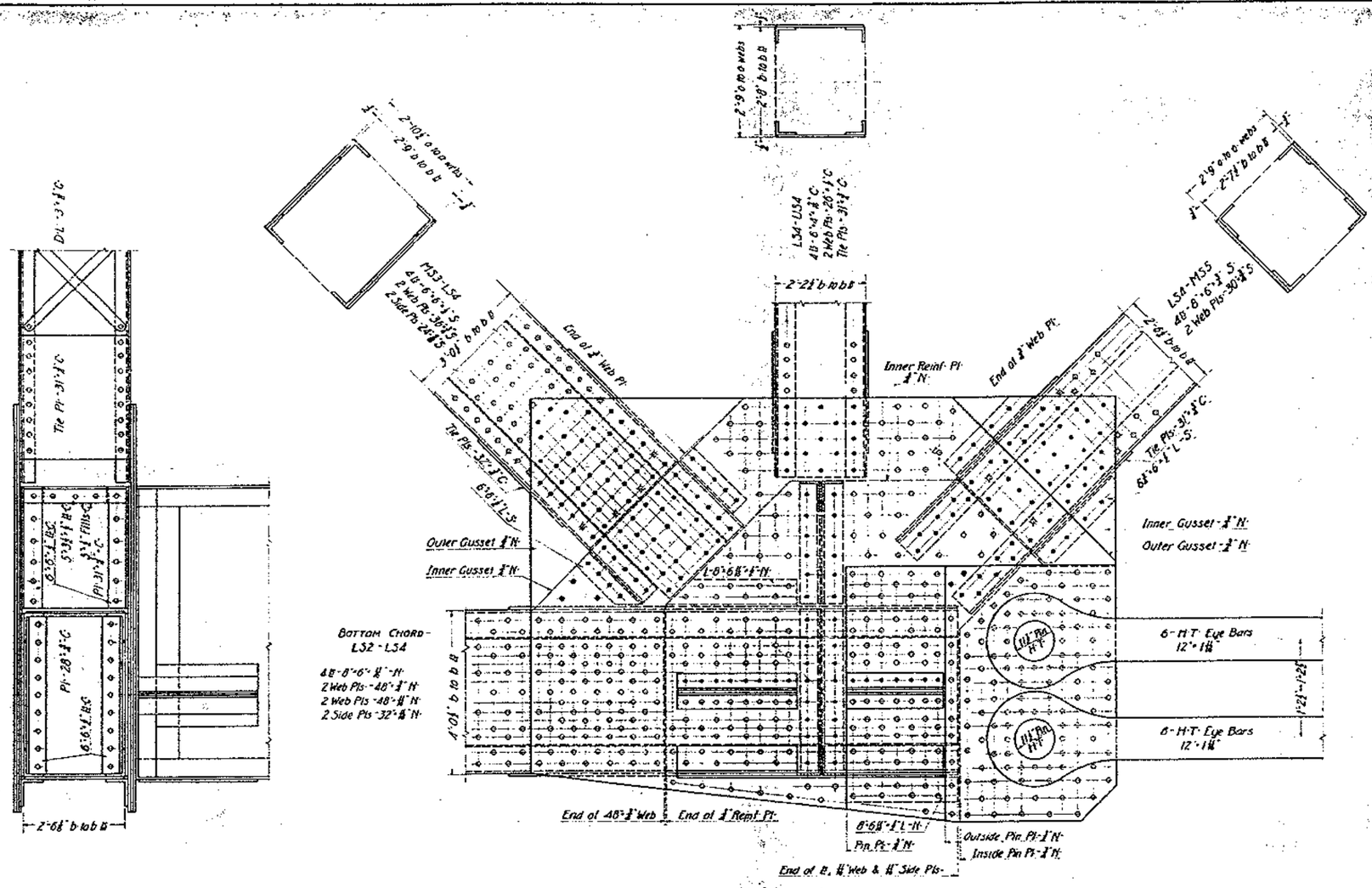
SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

DRAINAGE DETAILS

CONTRACT NO 7 DRAWING NO 43

JANUARY - 1933



NOTES:

Material - Nickel Steel, N.
Silicon Steel, S.
Carbon Steel, C.
Heat Treated Steel, H.T.

Rivets - In chords and gussets: Shop - 1⅛" ø C.
Field - 1⅛" ø C.
In web members: Shop - 1" ø C.
In bracing: Shop & Field - ⅞" ø C.

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

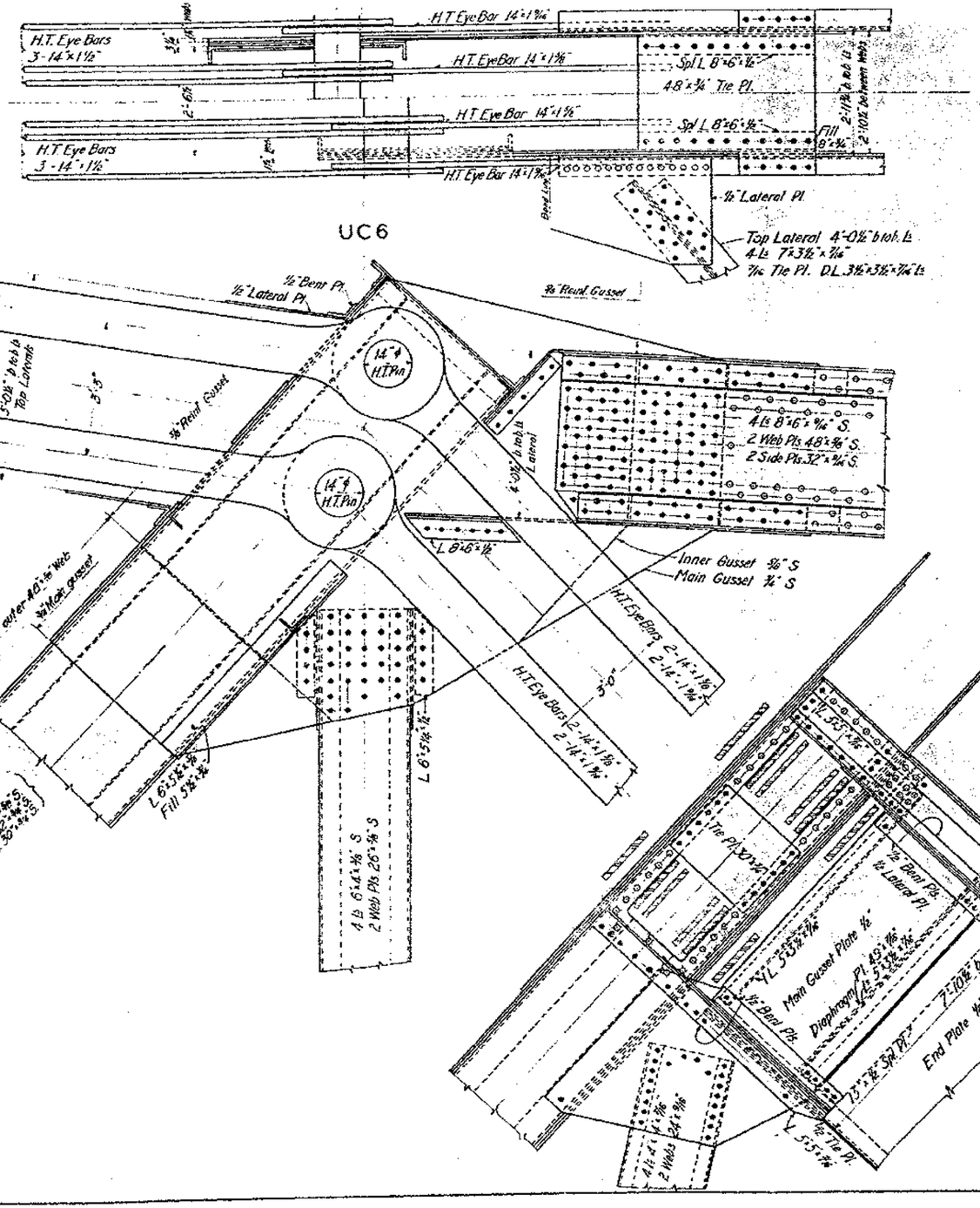
CANTILEVER STRUCTURE

PANEL POINT LS4

SCALE IN FEET 0 1 2 3

CONTRACT NO 7 SUP. DWG. NO 44

JUNE - 1933



Material: Carbon Steel except as noted.
Silicon Steel S
Heat Treated Steel H.T.
Rivets. For Web Members: Shop 1⅛" ϕ Carbon
Field 1¼" ϕ Carbon
For Bracing. Shop & Field ⅞" ϕ Carbon

CORRECT.

APPROVED.

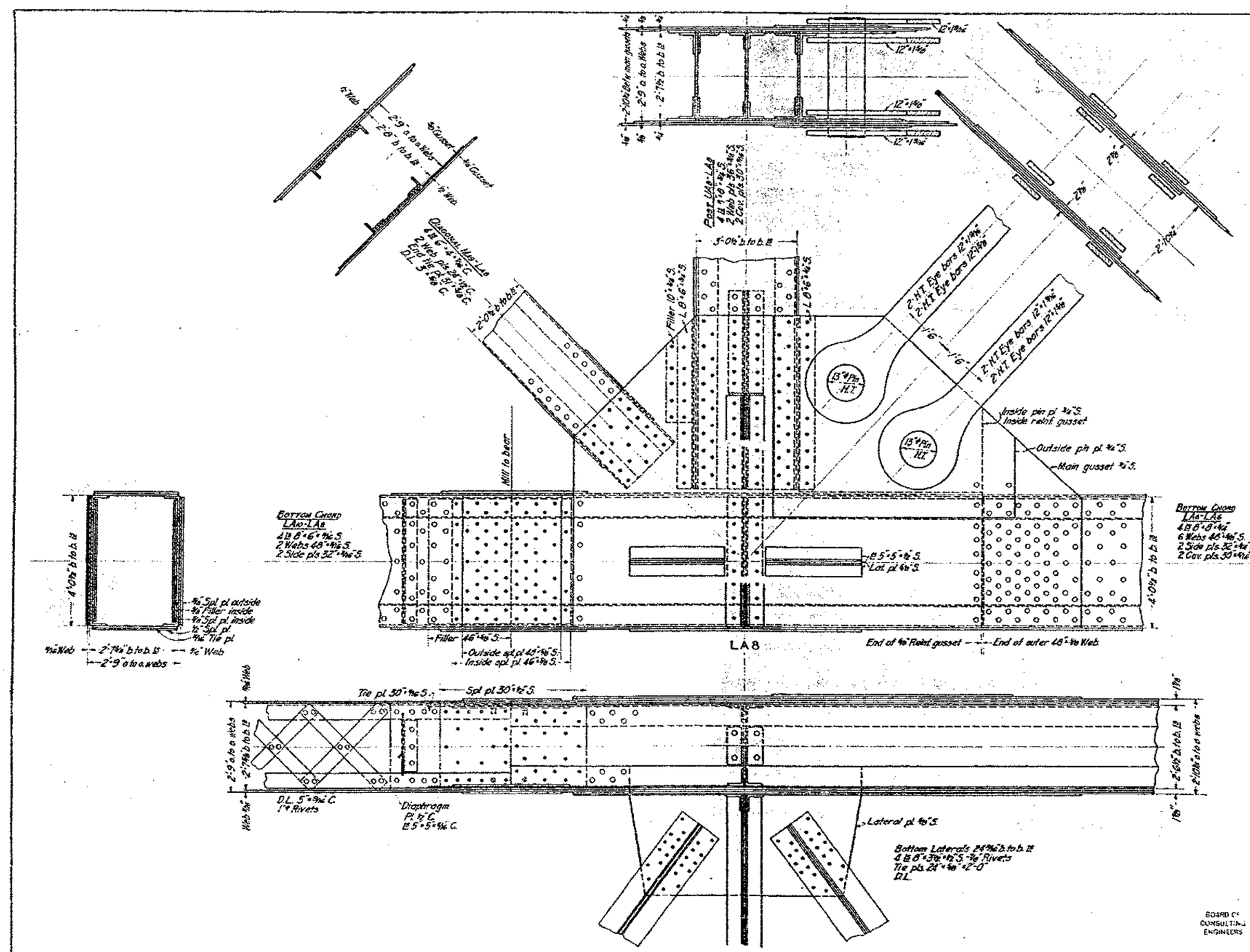
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER STRUCTURE
PANEL POINT UC6

SCALE IN FEET

CONTRACT NO 7 SUP. DWG. NO 45

JUNE - 1933



GENERAL NOTES

Material - Carbon Steel except as noted
Silicon Steel S
Heat Treated Steel H.T.
Rivets for Truss Members
Field 1⅛" ϕ Manganese
Stop ⅞" ϕ Carbon
For bracing - Field and stop ⅞" ϕ

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

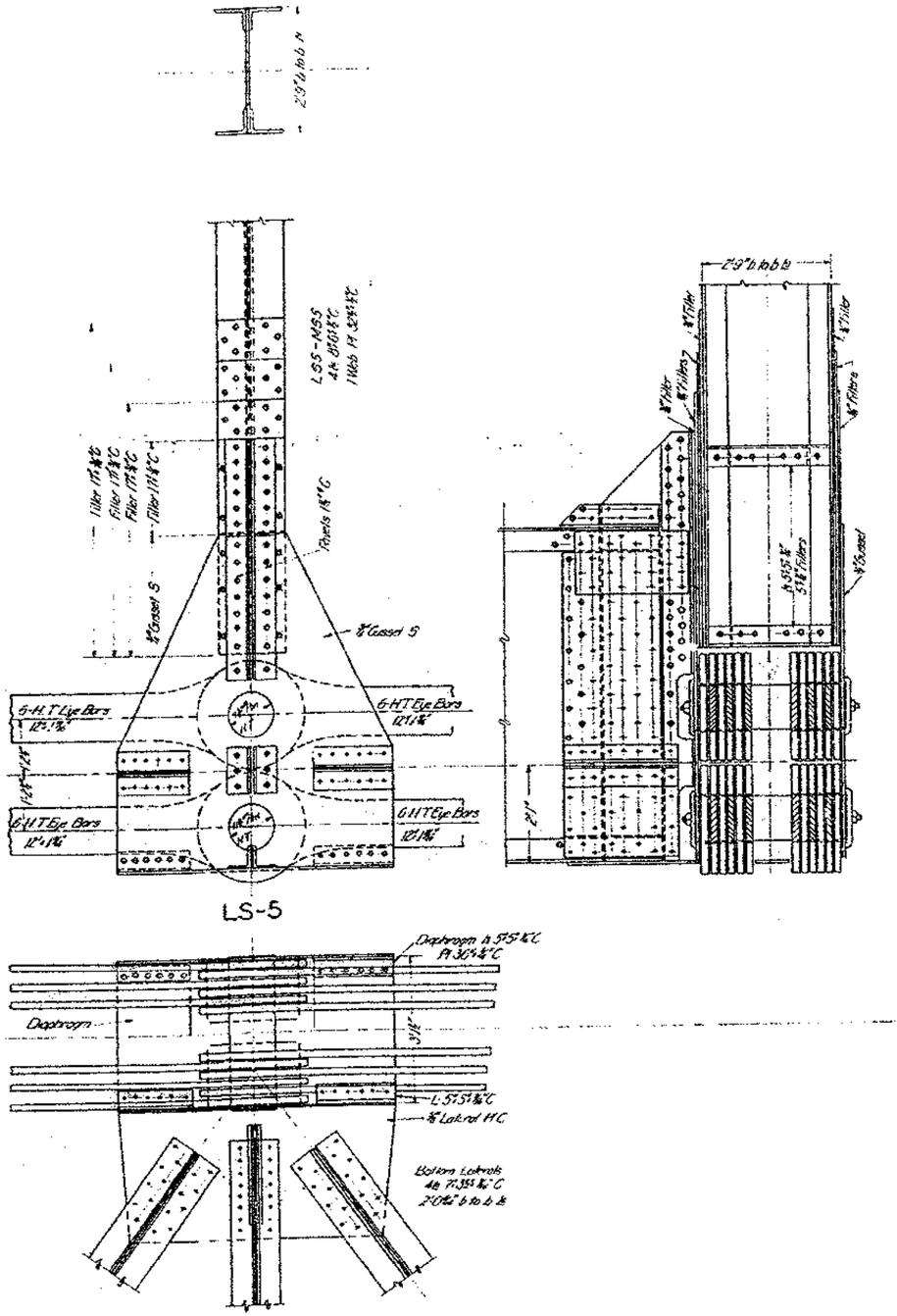
SAN FRANCISCO-OAKLAND BAY BRIDGE

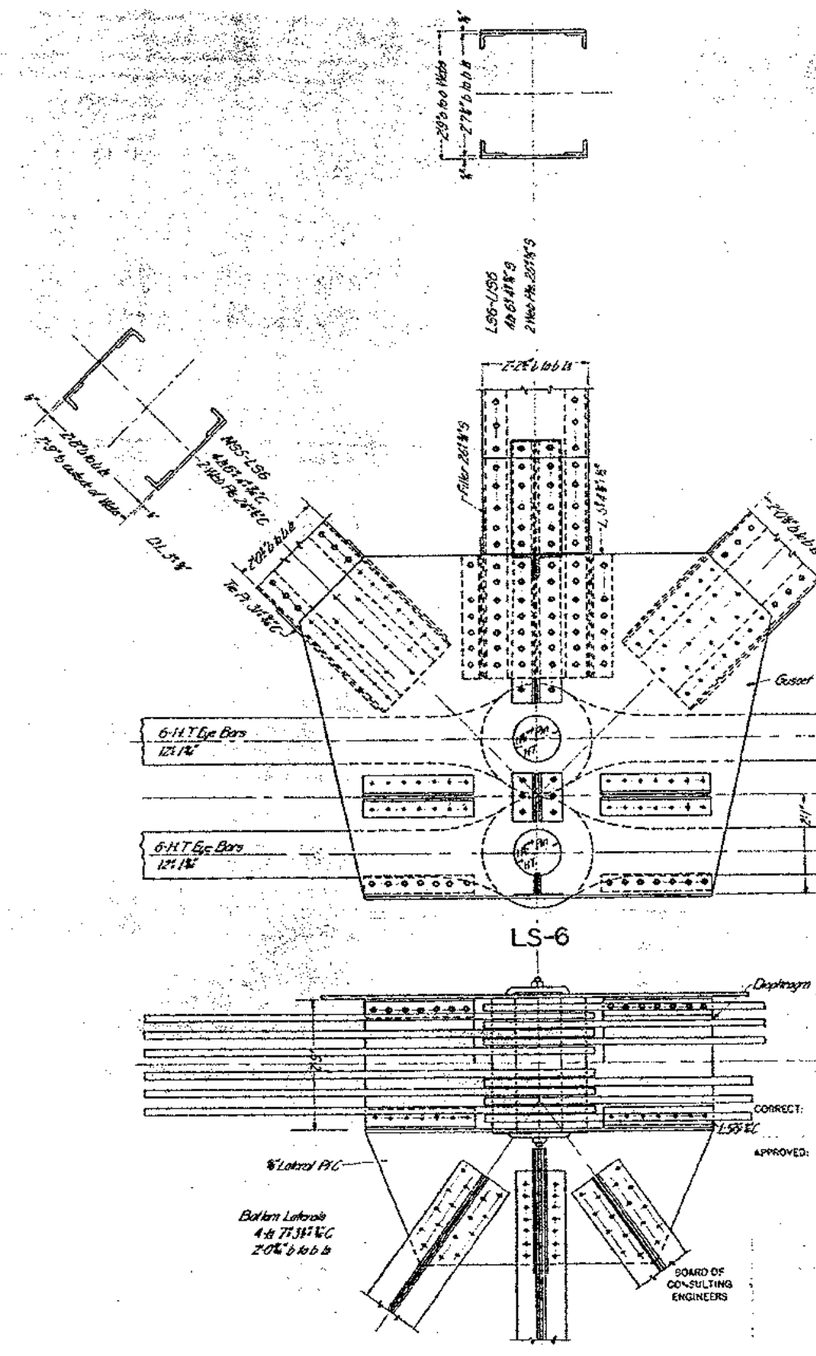
SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER STRUCTURE
PANEL POINT LA8

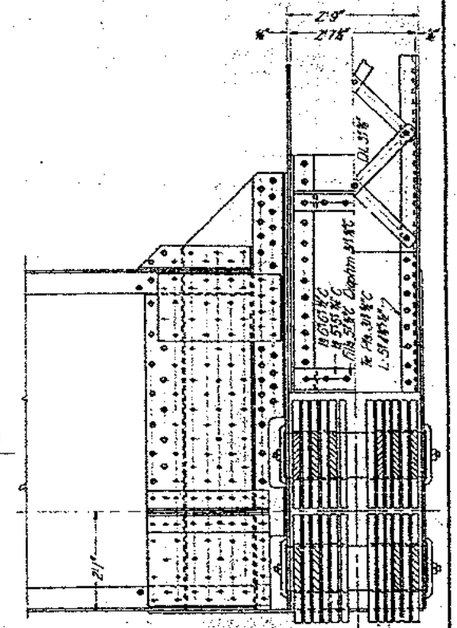
SCALE IN FEET

CONTRACT NO. 7 SUR DWG. NO. 46

JUNE - 1933







GENERAL NOTES

Material: Silicon Steel S
Carbon Steel C
Heat Treated Steel H.T.
Rivets: in Web members and Gussets 1st shop except as noted.
Field 1⅛"ø
Rivets for Bracing and Floorbeams 8th

CORRECT:

APPROVED:

Engineer of Design

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman

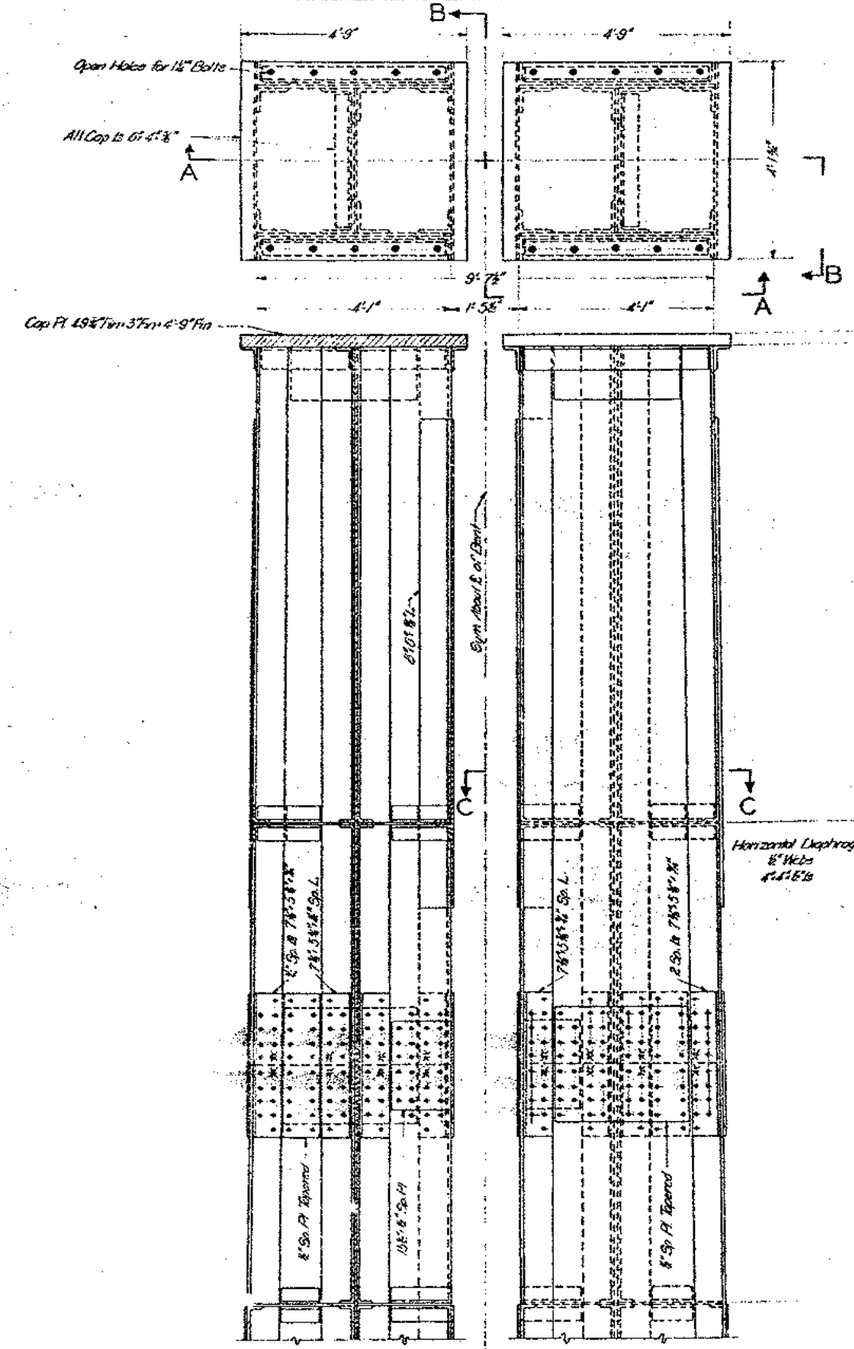
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE - EAST BAY CROSSING
CANTILEVER - SUSPENDED SPAN
PANEL POINTS LS5 AND LS6

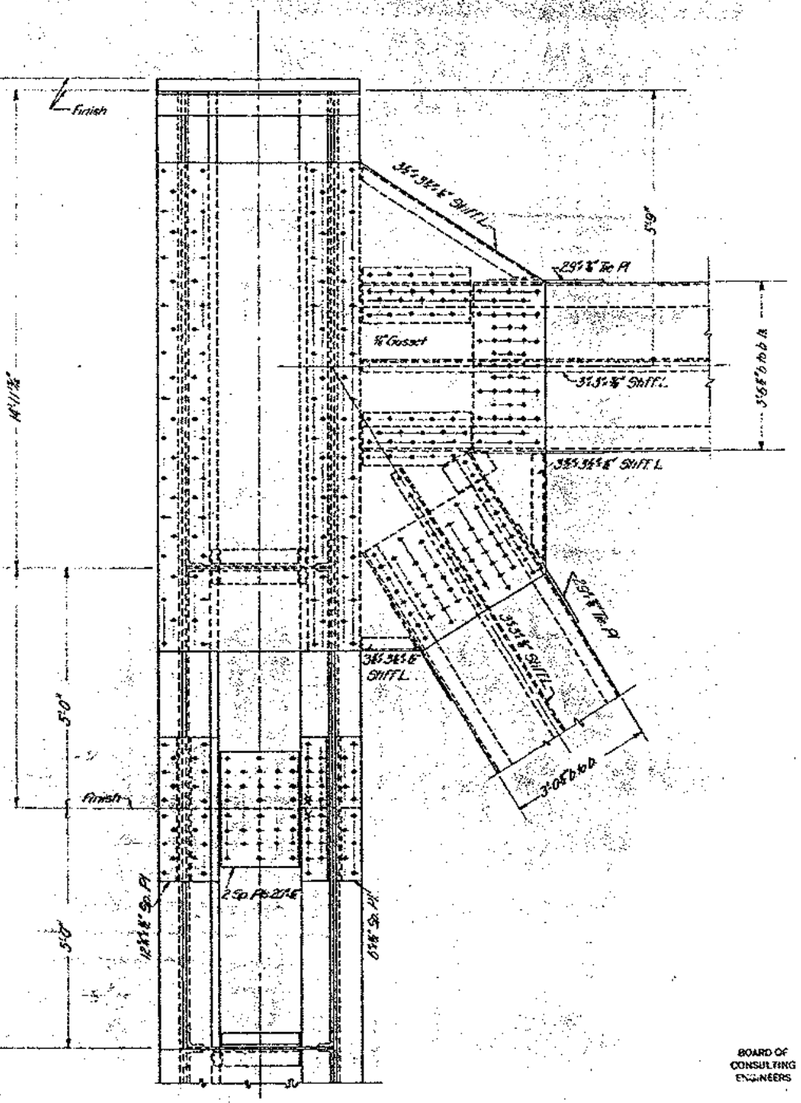
SCALE IN FEET 0 1 2

CONTRACT NO.7 SUP. DRAWING NO.48

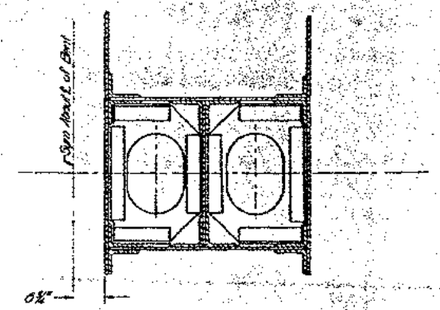
AUGUST - 1933



SECTION A-A



SECTION B-B



SECTION C-C

GENERAL NOTES

Material: Carbon Steel

Rivets: 1" in main member and bracing connections.
⅞" in bracing except end connection

See General Plan No 3 for steel material

All cells to be filled with ladders (not shown on this drawing)

Horizontal Diaphragm spacings: 1'-3½" & 6"

CORRECT:

APPROVED:

Engineer of Design

Bridge Engineer

Chief Engineer

Structural Steel Branch

Chairman

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE - EAST BAY CROSSING

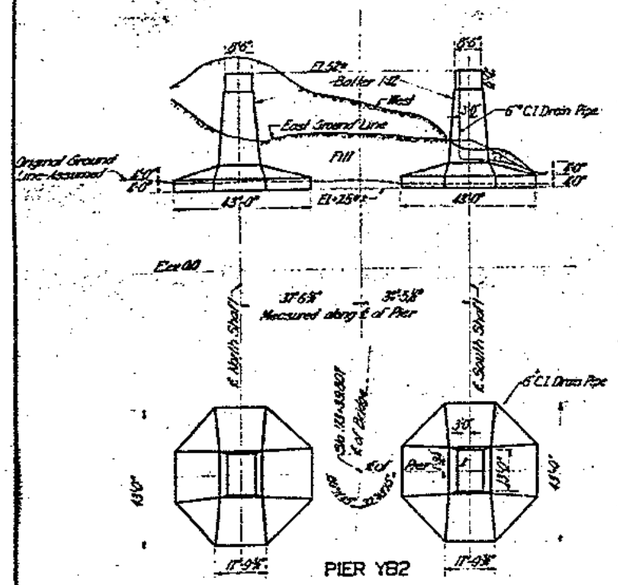
CAP DETAILS FOR BENT YB-3

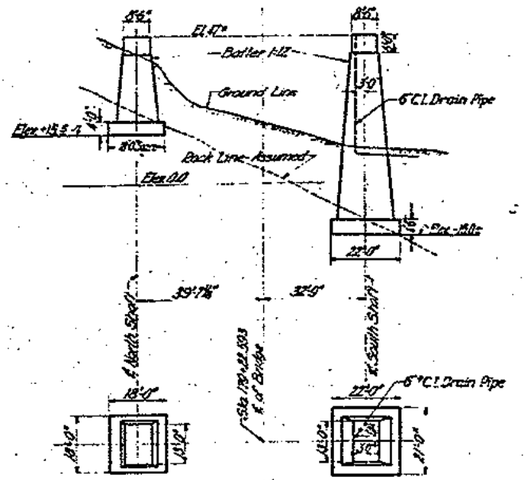
SCALE IN FEET

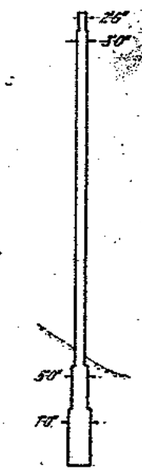
0 1 2 3

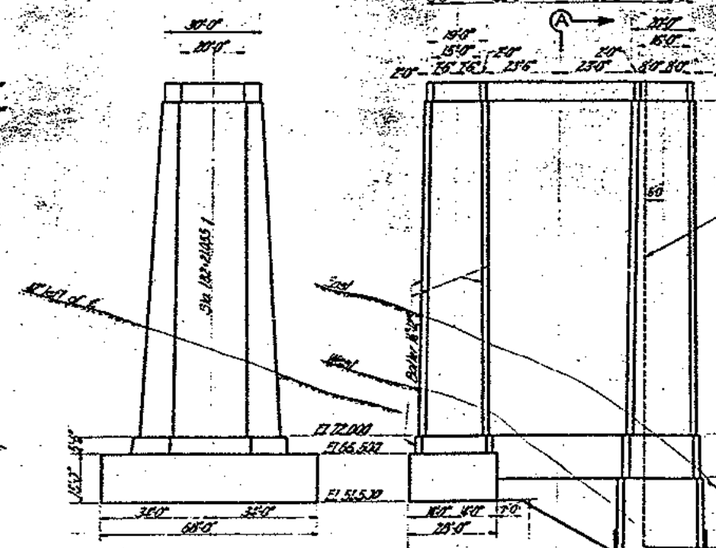
CONTRACT NO 7 SUP DRAWING NO 65

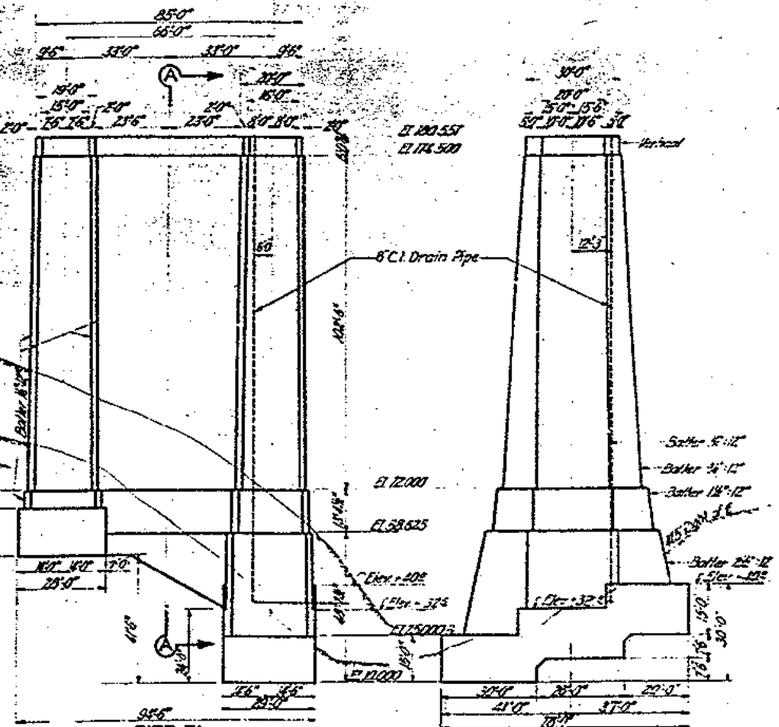
AUGUST - 1933

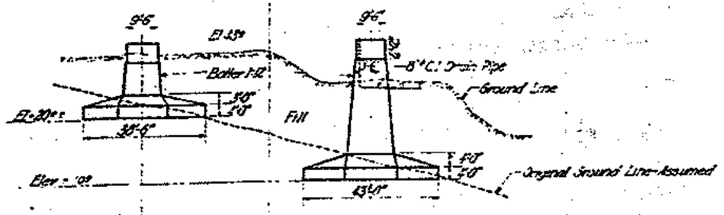












Make final footing elevations are to be determined in the field by the Engineer.
See Drawing No. for details of alignment.
Cast iron drain pipes to extend approximately 5'-0 outside of concrete. Vitrified clay pipe to be installed to carry drainage from C.I. pipe to existing sewer lines and to the Bay.

CORRECT

APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

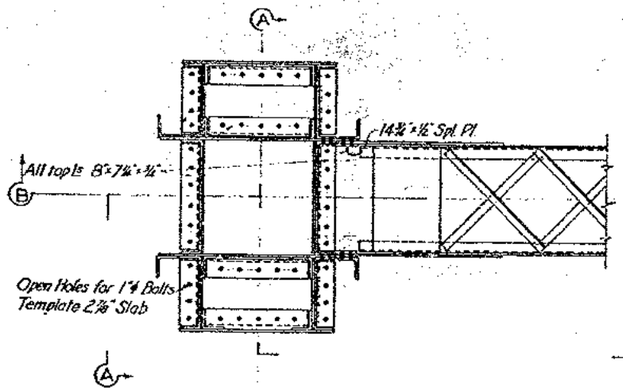
SAN FRANCISCO-OAKLAND BAY BRIDGE

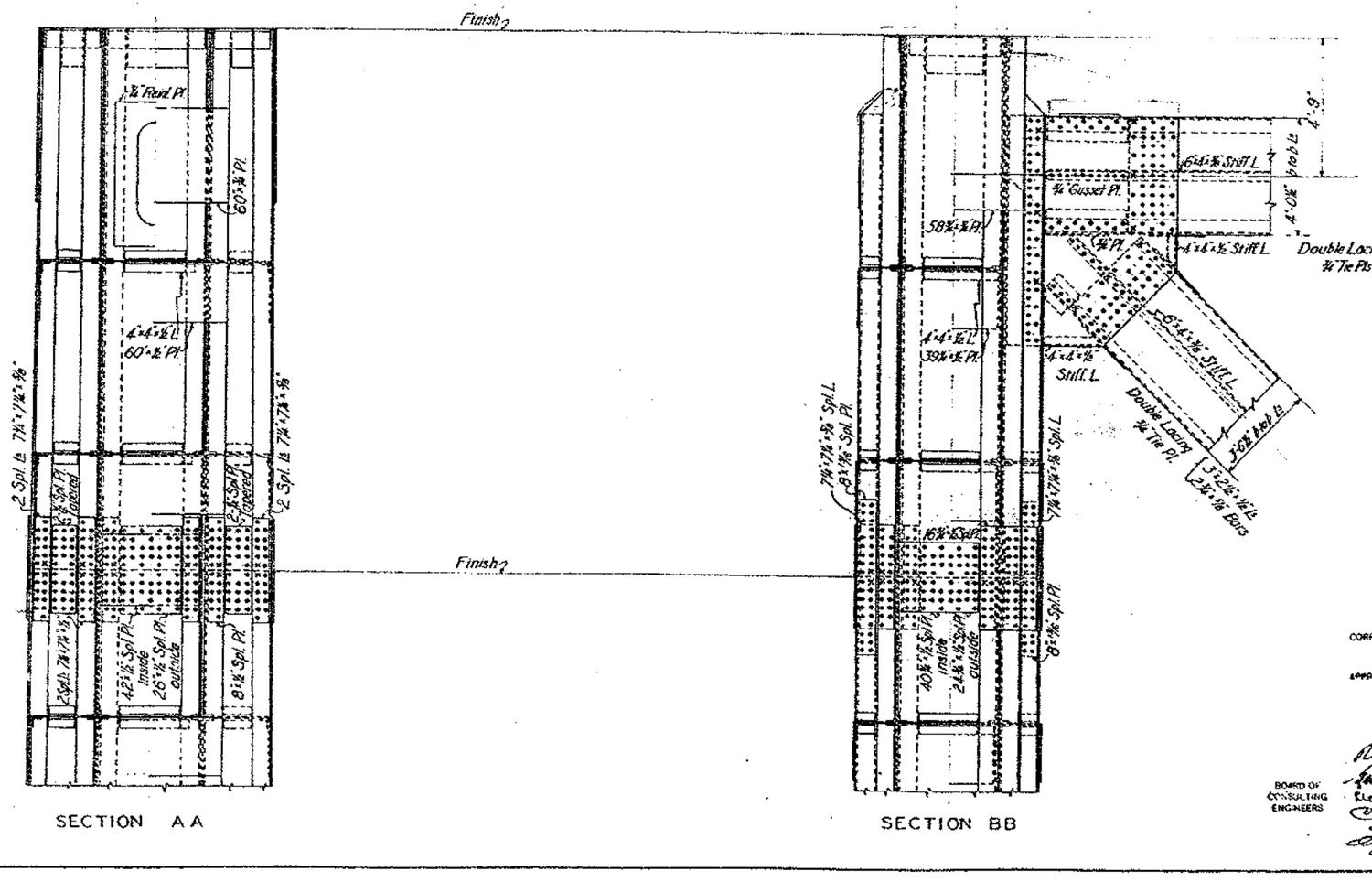
YERBA BUENA CROSSING
PIERS YB2 YB3 YB4 AND E1
PLANS AND ELEVATIONS

SCALE IN FEET 0 5 10 20 30 40

CONTRACT NO. 5 SUP. DRAWING NO. 32A

JANUARY - 1934





SECTION A A

SECTION B B

NOTES

Rivets: 1" ϕ in column and bracing connections.
⅞" ϕ in bracing except end connections.
Material: Silicon steel except horizontal diaphragms, bracing members, and gussets which are carbon steel.
See General Plan Drawing No. 10 for material and column profile ordinates.
All cells to be fitted with ladders.
Horizontal Diaphragm openings 1'6"x2'0".
Passage way Door Opening 1'4"x3'6".

CORRECT:

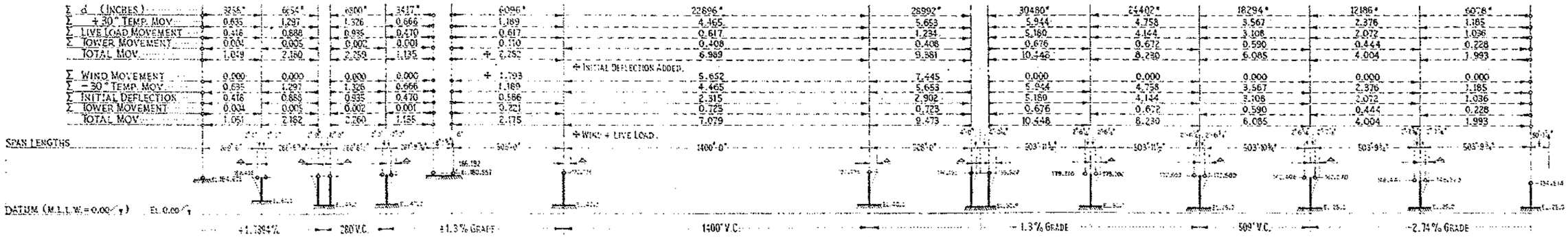
APPROVED:

BOARD OF CONSULTING ENGINEERS

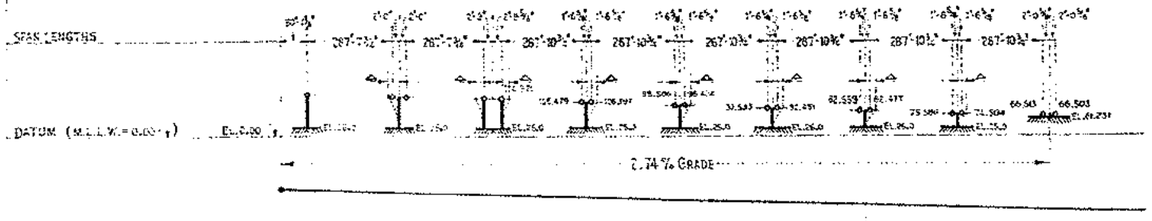
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
BENTS E5 TO E8 INCL.
DETAILS OF CAP

SCALE IN FEET 0 1 2 3 4

CONTRACT NO 7 SUP. DRAWING NO 68
AUGUST - 1933



Pier No.	YB1	YB2	YB3	YB4	E1	E2	E3	E4	E5	E6	E7	E8	E9
Length (d)	271.50′	291.327′		291.459′	296.402′	508.50′	1400.00′		512.00′	510.50′	509.00′	509.00′	509.00′	506.50′	
Movement	Fixed	Exp.	Expansion	Exp.	Exp.	Fixed	Fixed	Exp.	Exp.	Exp.	Exp.	Exp.	Exp.	Fixed	
Station on Arc Center Line															
Elevation Upper Deck															
" Lower Deck															
" ℄ Between Pins	N.T.														
" ℄ Pins	S.T.														
" Top Steel Column															
" Top Concrete															
Net Length Column															
Initial Deflection (Δ) For D.L. @ 62° F.	0.000	0.035		0.024	0.078	0.039	0.000	0.000	0.069	0.193	0.242	0.332	0.345	0.259	0.175	0.086	0.000



Pier No.	E9	E10	E11	E12	E13	E14	E15	E16	E17
Length (d)	506.50′	289.646′	290.396′	292.260′	291.000′	291.000′	291.000′	291.50′	
Movement	Fixed	Exp.	Expansion	Exp.	Exp.	Exp.	Exp.	Exp.	Fixed
Station on Arc Center Line									
Elevation Upper Deck									
" Lower Deck									
" ℄ Between Pins	N.T.								
" ℄ Pins	S.T.								
" Top Steel Column									
" Top Concrete									
Net Length Column									
Initial Deflection (Δ) For D.L. @ 62° F.	0.000	0.029	0.058	0.190	0.159	0.127	0.095	0.063	0.032	0.000

Distance Crown Roadway To ℄ Pin

Cantilever
- Floor Beam 7′-2½″
- Covers 0′-1¹⁵⁄₁₆″
- Slab L 0′-7″
- Crown 0′-1½″
- 8′-0⅜″
- ½ Lower Chord 2′-1″

Cr. Rdwy. To ℄ Pin ···· 5′-11¹⁵⁄₁₆″

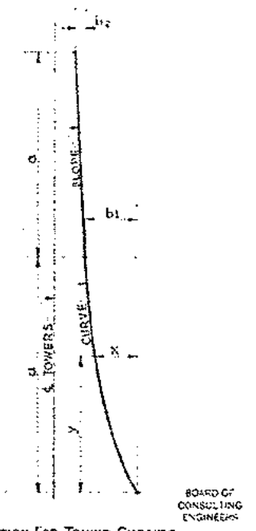
504′ Spans
- Floor Beam 7′-2½″
- Covers 0′-1⅞″
- Slab L 0′-7″
- Crown 0′-1⅜″
- 8′-0⅛″
- ½ Lower Chord 1′-9½″

Cr. Rdwy. To ℄ Pin ···· 6′-2⅛″

288′ Spans
- Floor Beam 6′-8½″
- Covers 0′-1⅞″
- Slab L 0′-7″
- Crown 0′-1½″
- Gusset Pl. 0′-0½″
- ½ Lower Chord 1′-5¾″

Cr. Rdwy. To ℄ Pin ···· 6′-11⅞″ +

+ Note: 6′-11⅞″ except Spans On Curve



Equation For Tower Curves

$$X = \frac{b_1^2}{\frac{y}{0.92} + b_1 - b_2}$$

Notes:
Trusses Cambered For Dead Load + ½ Uniform Live Load (2020 Lbs. Per Lineal Foot Per Truss).
Tower To Be In Vertical Position For Dead Load + ½ Uniform Live Load At 62° F.
The Initial Deflections (Δ) Are For Dead Load At 62° F.
Deflections Are Given For South Truss. - North Truss To Have Same.

Correct -

Approved:

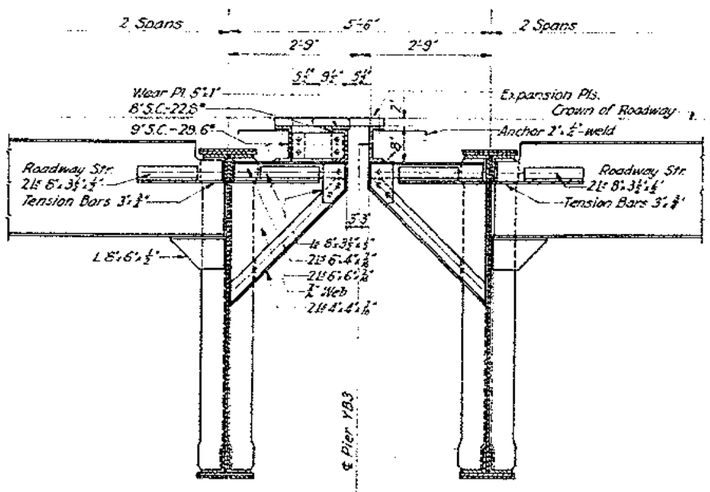
Board Of Consulting Engineers

State Of California
Department Of Public Works

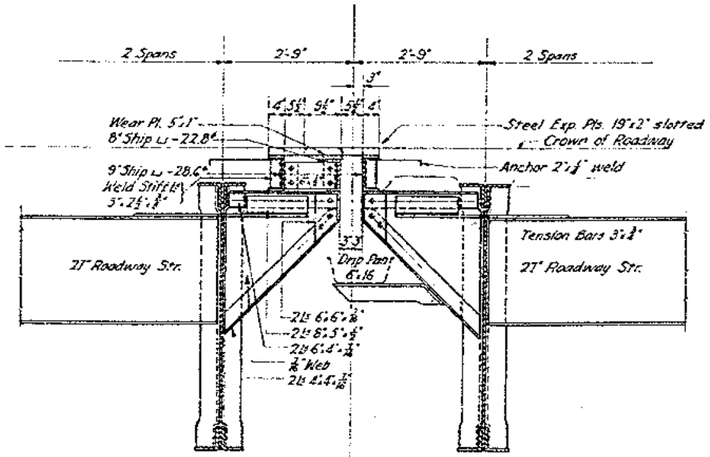
San Francisco-Oakland Bay Bridge
Superstructure East Bay Crossing
Erection Data - Bents

Contract No. 7. Sup. Drawing No. 84

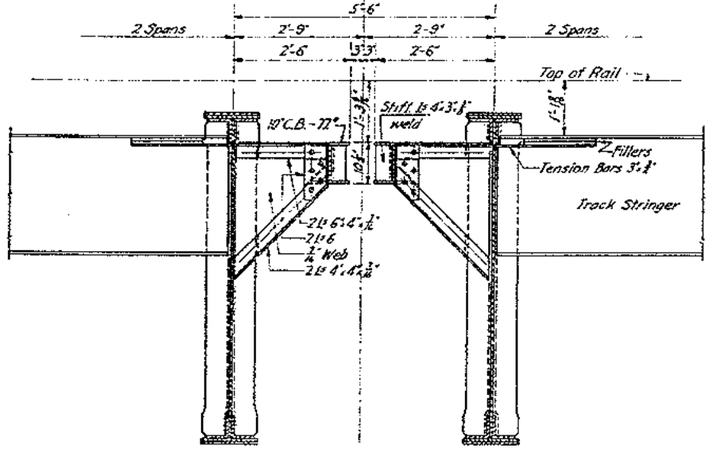
Sept. - 1933



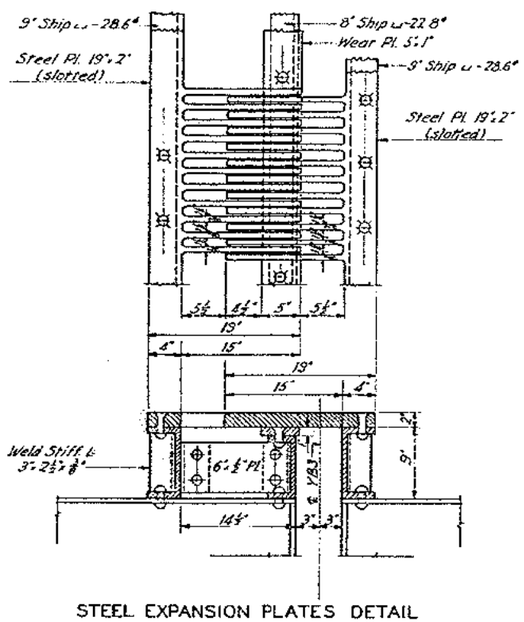
ROADWAY EXPANSION JOINT
LOWER DECK



ROADWAY EXPANSION JOINT
UPPER DECK



EXPANSION JOINT-TRACK SUPPORT
LOWER DECK



STEEL EXPANSION PLATES DETAIL

SCALE IN FEET
0 1 2

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

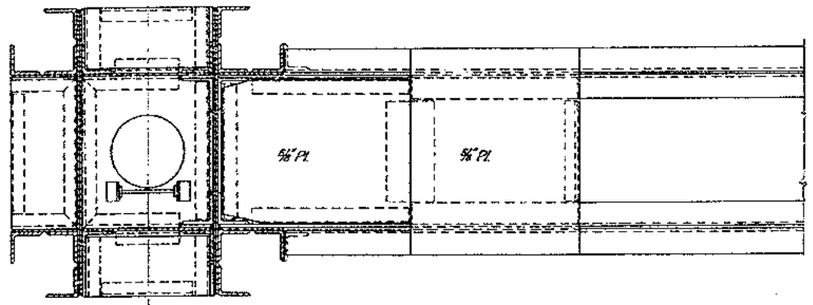
SUPERSTRUCTURE - EAST BAY CROSSING

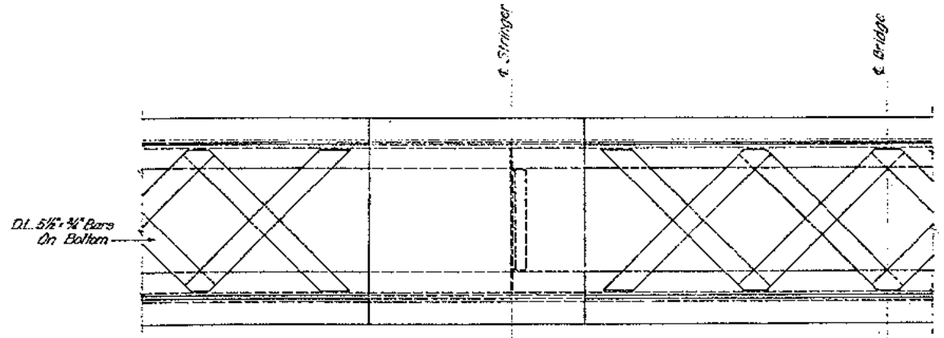
EXPANSION AT YB3
FRAMING FOR UPPER & LOWER DECK

SCALE IN FEET
1 0 1 2 3

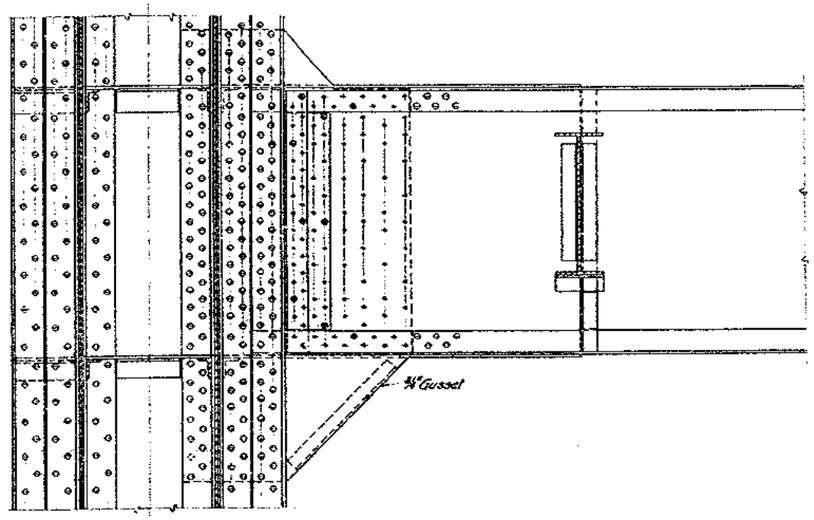
CONTRACT NO 7 SUP DRAWING NO. 65

NOVEMBER - 1933





VIEW OF LOWER FLANGE



CORRECT-

APPROVED-

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE - EAST BAY CROSSING

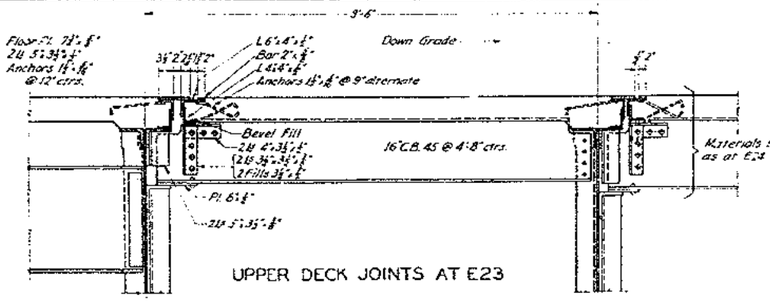
CANTILEVER SPAN

UPPER DECK CONNECTION TO MO-LO

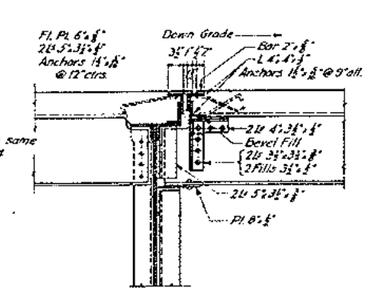
SCALE IN FEET 0 1 2 3 4

CONTRACT NO 7 SUP DRAWING NO 86

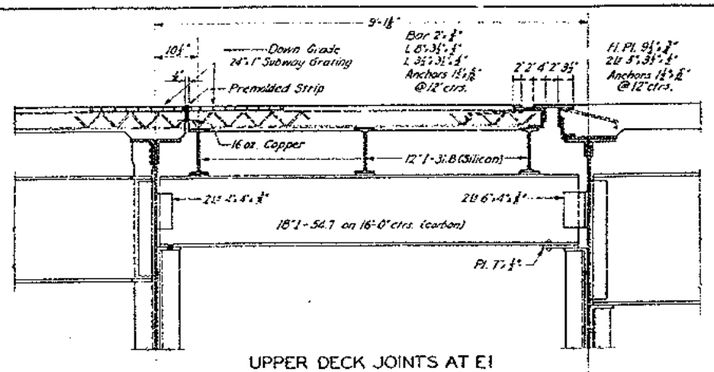
OCTOBER - 1933



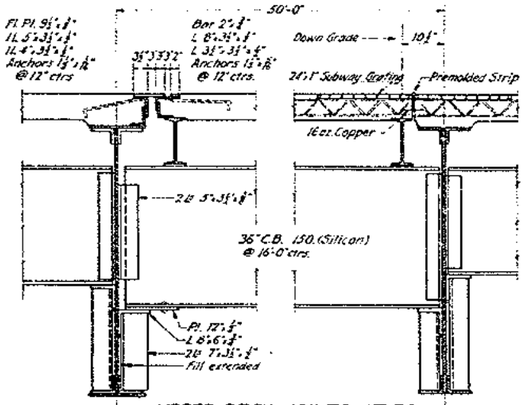
UPPER DECK JOINTS AT E23



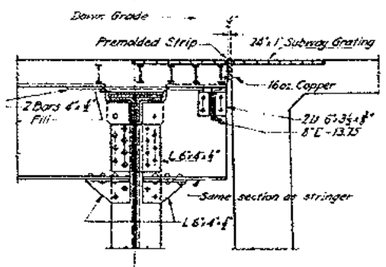
UPPER DECK JOINTS AT E24-E32, INCL.



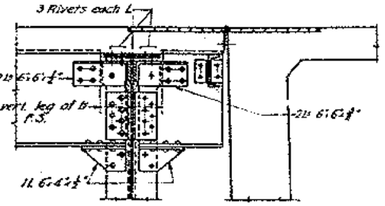
UPPER DECK JOINTS AT E1



UPPER DECK JOINTS AT E9

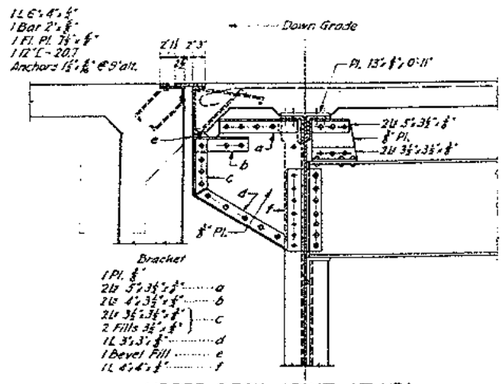


Typical except as shown below

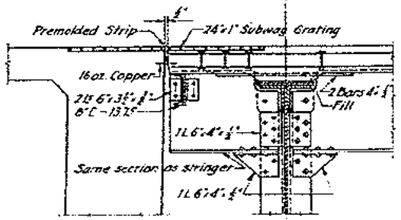


Bracket on line next to South curb

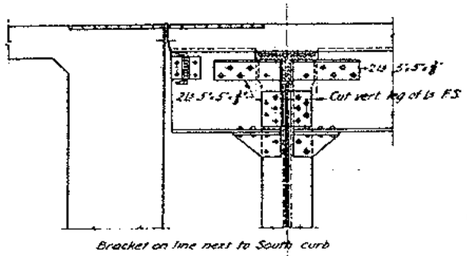
LOWER DECK JOINT AT E23



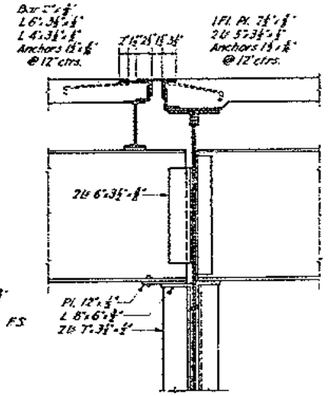
UPPER DECK JOINT AT YBI



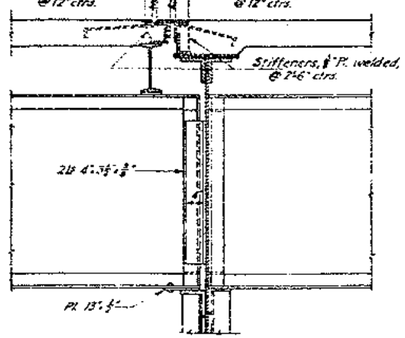
Typical except as shown below



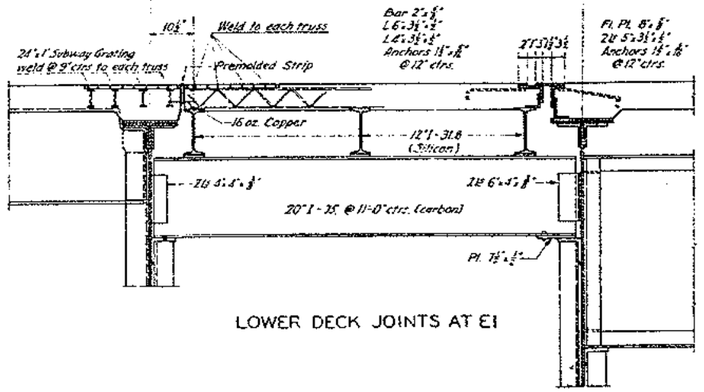
LOWER DECK JOINT AT YBI



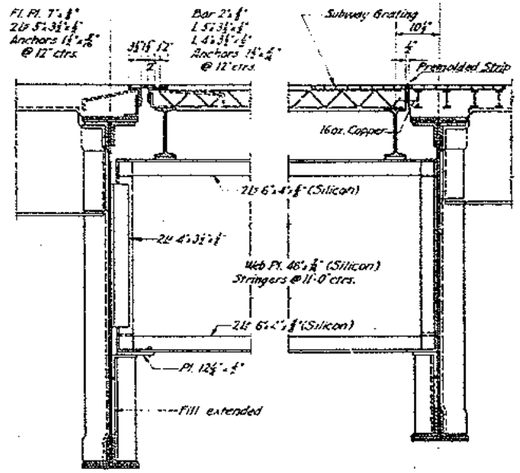
UPPER DECK JOINT AT END OF CANTILEVER ARM, PANEL POINT L5.



LOWER DECK JOINT, END OF CANTILEVER ARM



LOWER DECK JOINTS AT E1



LOWER DECK JOINTS AT E9

GENERAL NOTES

In all cases provide stiffeners at 2'-6" ctrs. max. where slab is carried on joist or floor beam; over each stringer and midway between stringers where slab is carried on stringer. Stiffeners to be ⅜" plate, welded. (See lower deck joint, end of cantilever arm.)

Weld subway grating to slab reinforcing trusses, four welds to each truss where trusses are parallel to roadway; weld at 9" ctrs. to each truss contacted where trusses are transverse to roadway. (See detail of lower deck joint at E9.)

Rivets in 2" bars – ¾" ϕ @ 5" ctrs., csk. on top.

Rivets in floor plates – ¾" ϕ @ 5" ctrs., csk. on top.

Rivets in vert. leg of expansion L's – ¾" ϕ @ 3½" ctrs. – (flattened or csk. as required.)

All other rivets ¾" ϕ.

Anchors welded.

CORRECT:

APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

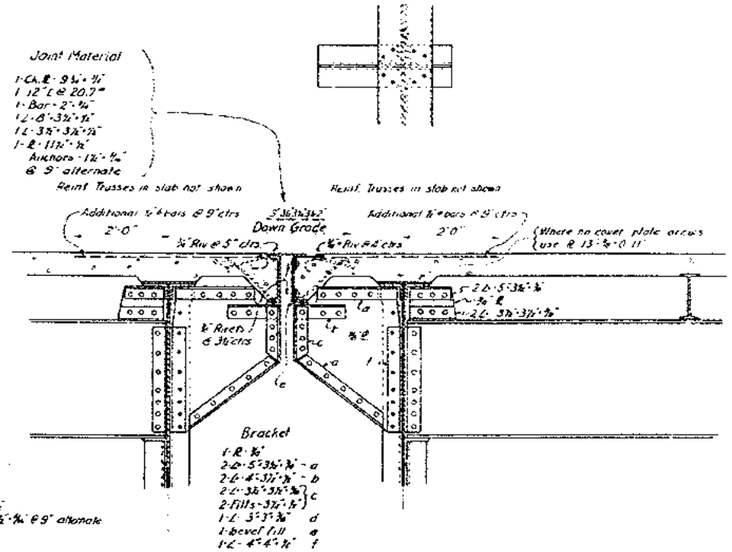
SUPERSTRUCTURE – EAST BAY CROSSING

EXPANSION JOINTS

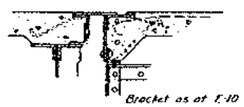
SCALE IN FEET 0 1 2

CONTRACT NO 7 SUP. DRAWING NO 87

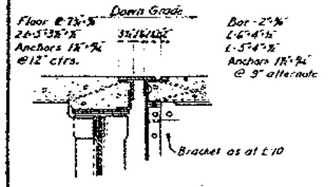
NOVEMBER - 1933



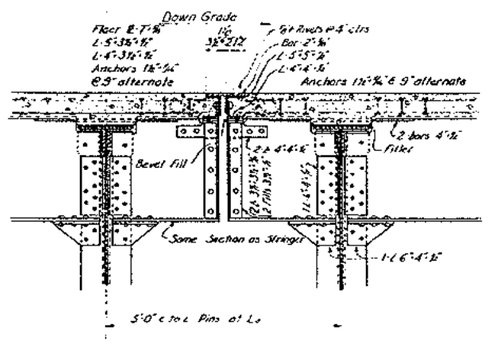
UPPER DECK JOINT AT E5, E6, E7, & E8

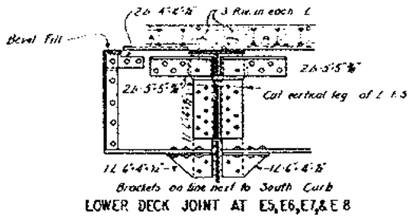


UPPER DECK JOINT AT E17 TO E22 INCL.

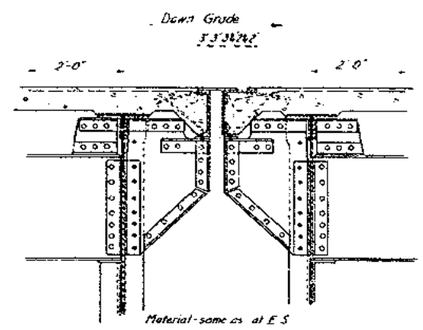


LOWER DECK JOINT AT E17 TO E22

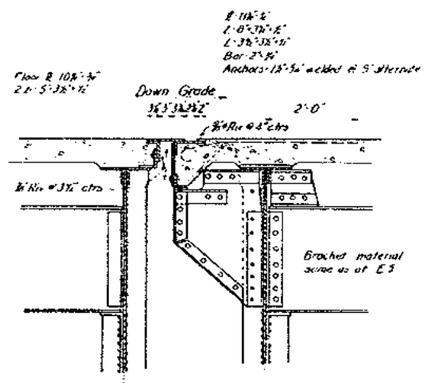




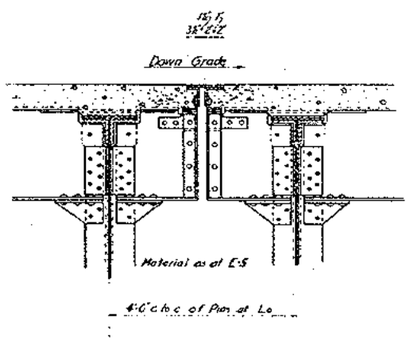
LOWER DECK JOINT AT E5, E6, E7, & E 8



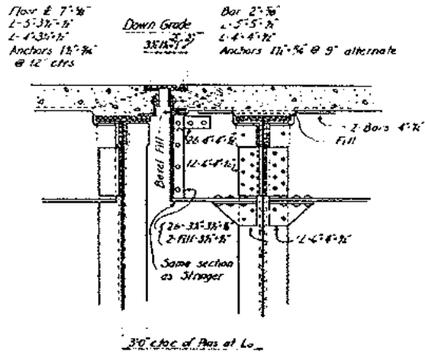
UPPER DECK JOINT AT YB2 & YB4

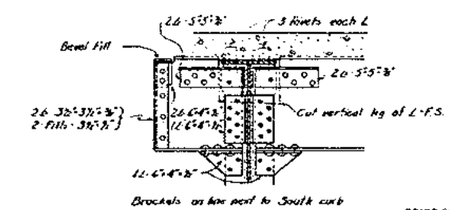


UPPER DECK JOINT AT E10 & E12, E13, E14, E15, & E16



LOWER DECK JOINT AT YB2 & YB4





LOWER DECK JOINT AT E10 & E12, E13, E14, E15 & E16

CORRECT:

APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

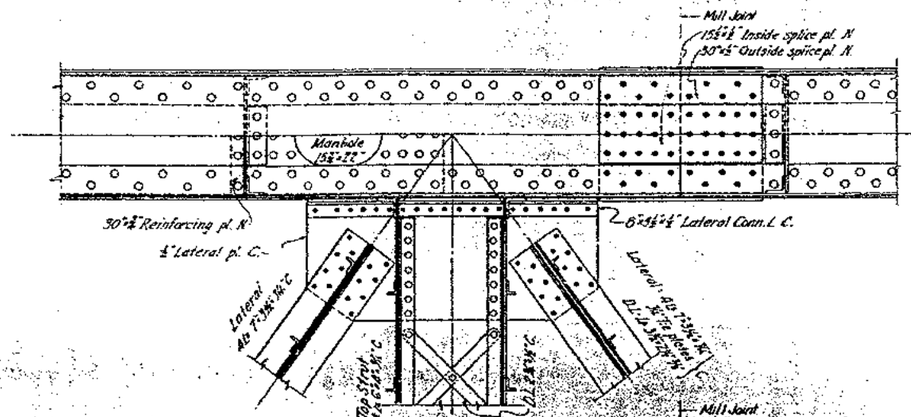
SUPERSTRUCTURE-EAST BAY CROSSING

EXPANSION JOINTS

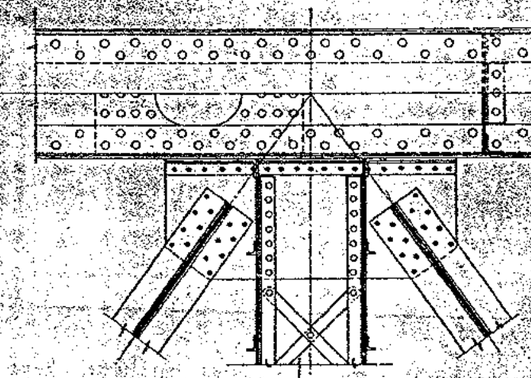
SCALE IN FEET
0 1 2 3

CONTRACT NO 7 SUP. DRAWING NO. 88

NOVEMBER - 1933

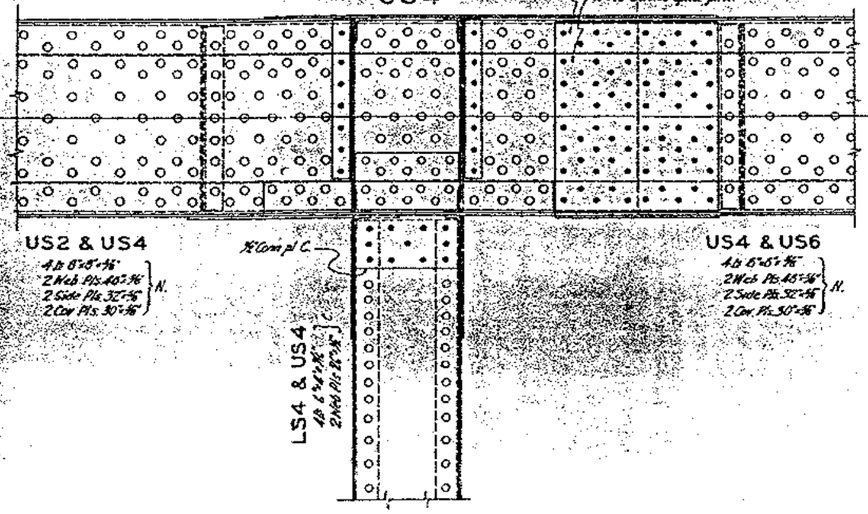


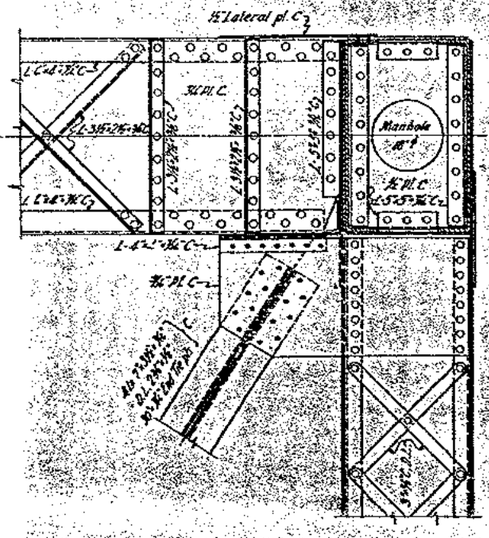
US4

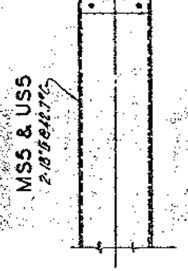


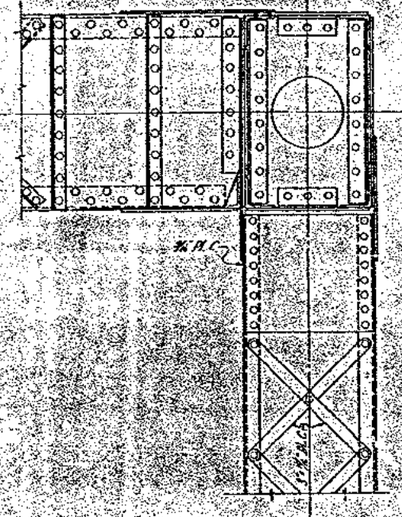
US5

US5 is identical.









MATERIAL
Nickel Steel - N
Carbon Steel - C

RIVETS CARBON STEEL
⅞" in chord splices
1⅛" shop in chord
1⅛" shop and field in Gussets
1" in webs members
⅞" in lateral and sway bracing

BOARD OF CONSULTING ENGINEERS

CORRECT:

APPROVED:

Engineer of Design

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING
SUSPENDED SPAN
JOINTS US3-US4-US5

SCALE IN FEET 0 1 2 3

CONTRACT NO. 7. SUP. DRAWING NO. 49

AUGUST - 1933

JRL

MSI-USI

MSI-LSI

MSI-USO

MSI

MSI

Note.
Material not specified is carbon steel

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

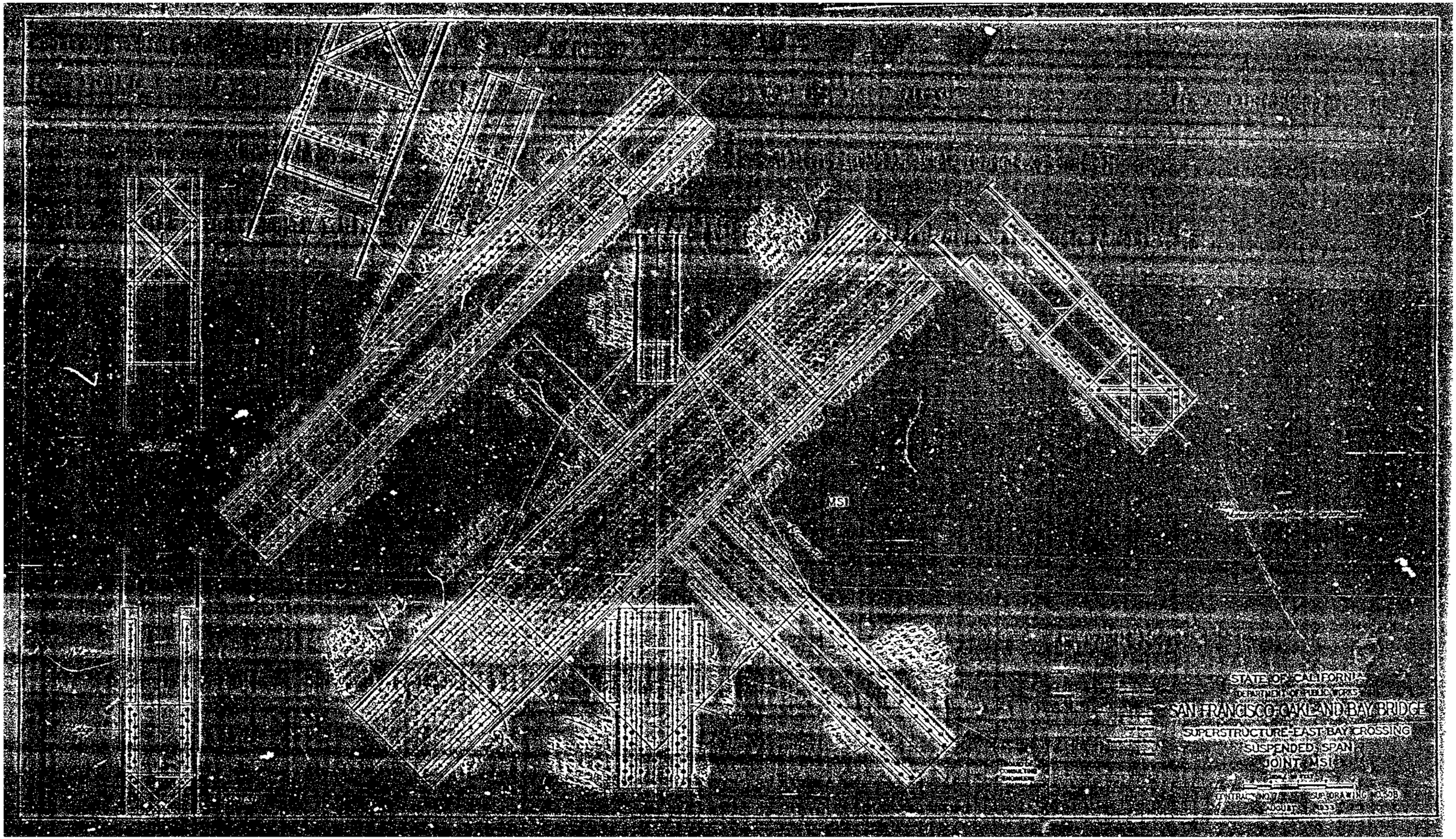
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE - EAST BAY CROSSING
SUSPENDED SPAN - JOINT MSI

SCALE IN FEET

CONTRACT NO.7 SUPDRAWING NO.50A

AUGUST - 1933


M51
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
SUSPENDED SPAN
JOINT M51

MS3-US2

MS3-LS2

MS3-US3

MS3

MS5-US5

MS5

MS5-US6

MS5-LS6

MS5-US5

MS5-LS5

MS5-LS4

MS3-LS4

MS3-LS3

MS3-LS2

MS3-LS3

Note
Material:
Silicon Steel S
Material not otherwise designated is Carbon Steel

CORRECT:

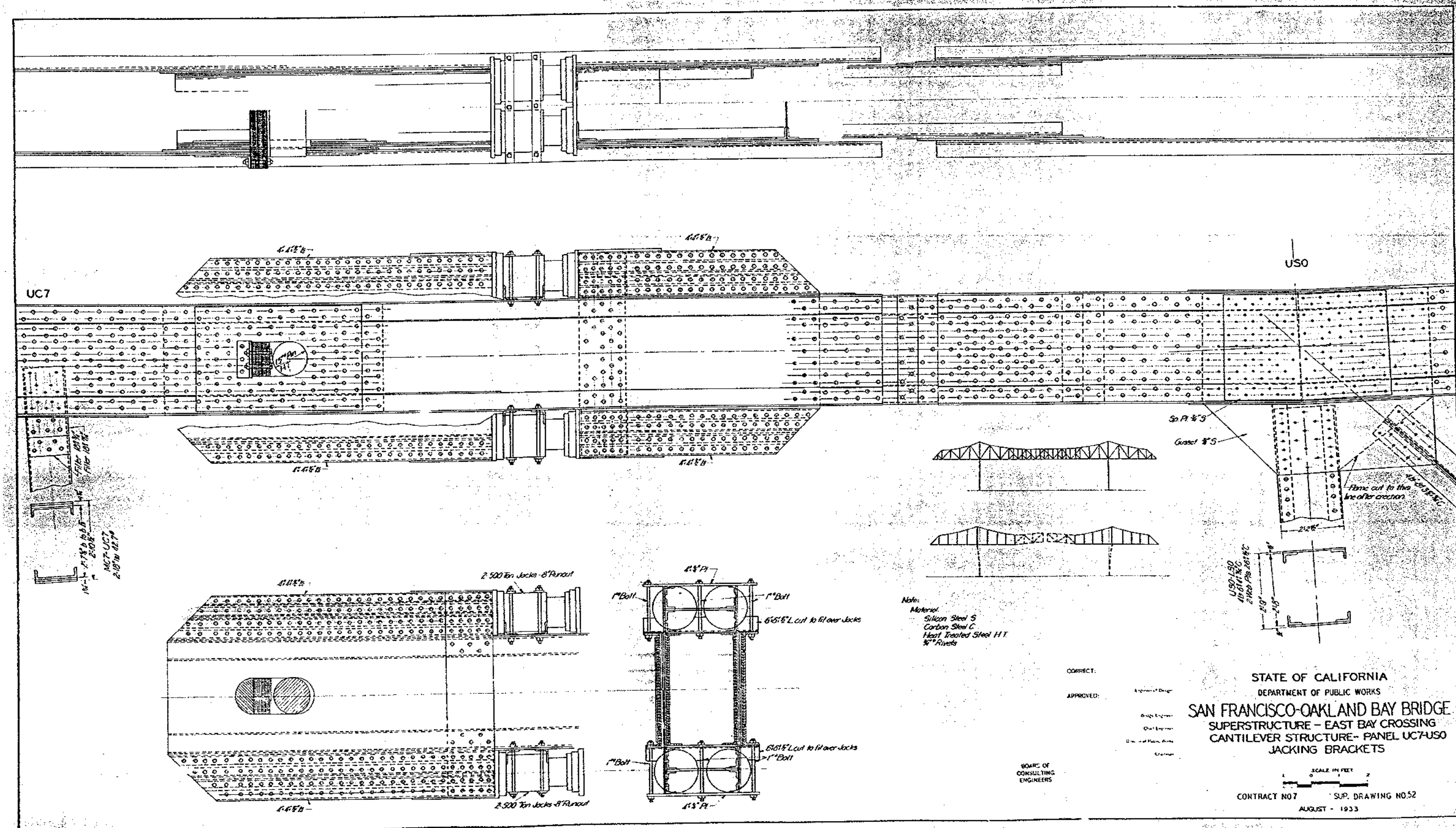
APPROVED:

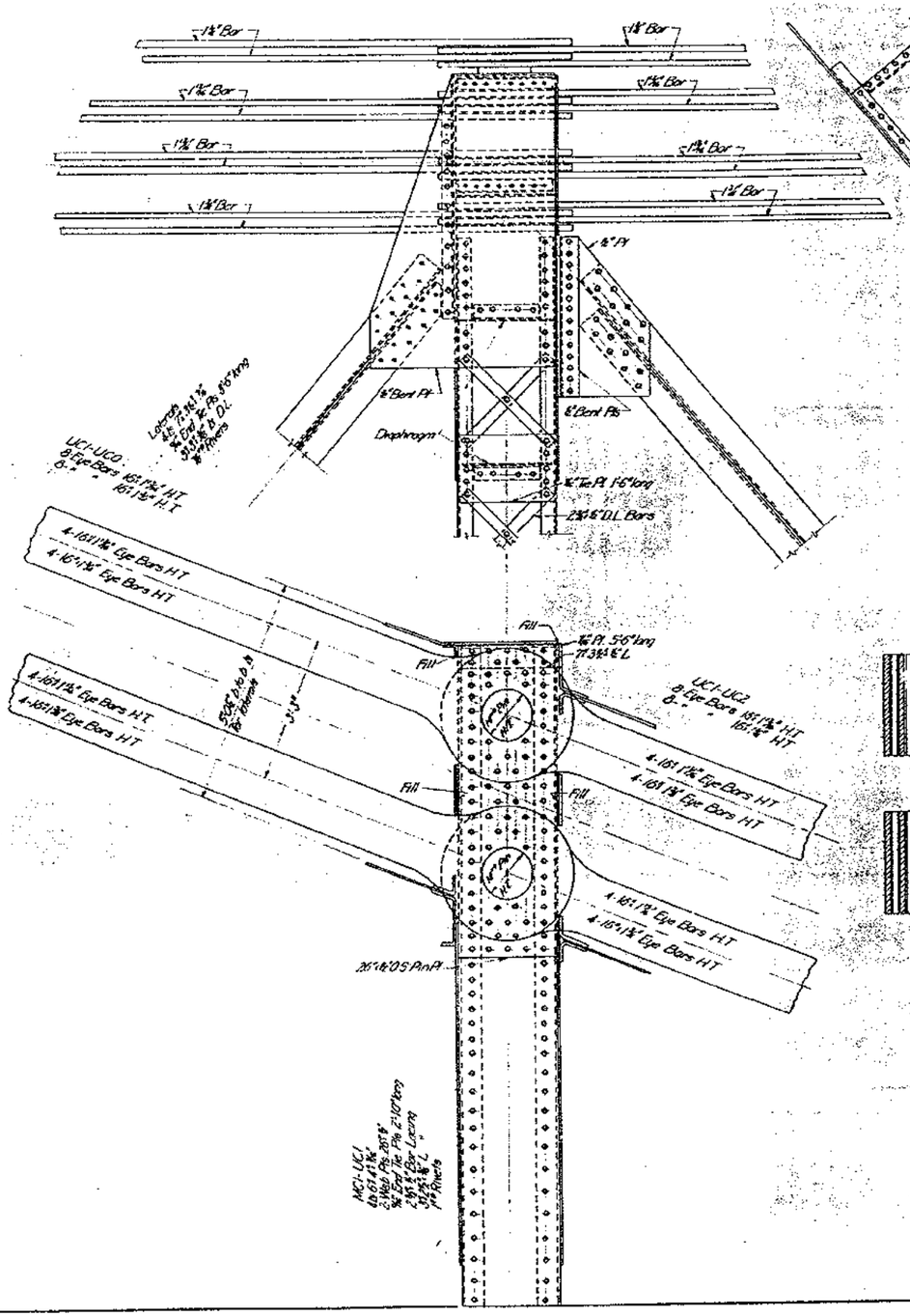
BOARD OF CONSULTING ENGINEERS

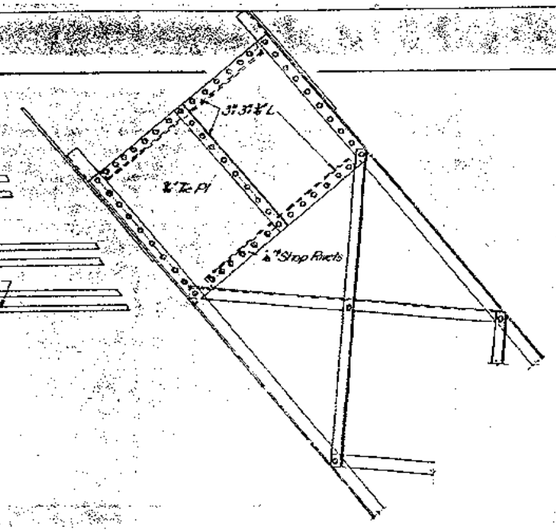
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
SUSPENDED SPAN
JOINTS MS3 & MS5

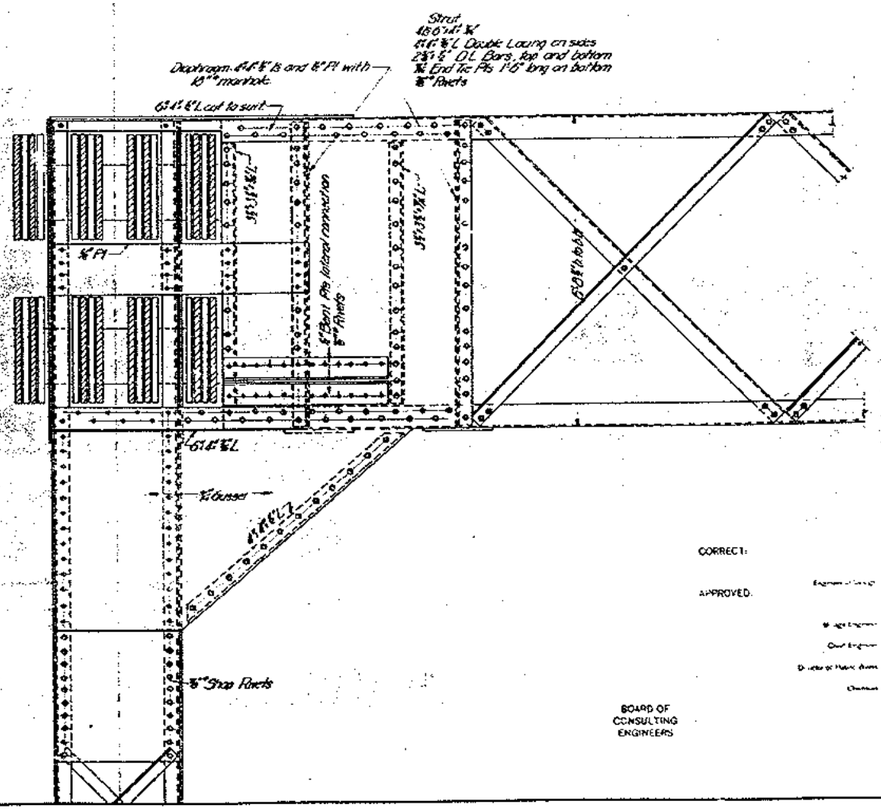
SCALE IN FEET
0 1 2 3

CONTRACT NO 7 SUP DRAWING NO 51.
AUGUST-1933


UC7
USO
4-4½"ß
4-4½"ß
4-4½"ß
4-4½"ß
4-4½"ß
4-4½"ß
15" Pin H.T.
Sp. Pl. ¾" S
Gusset ¾" S
Filler 18 1¾"
Filler 18 1⅞"
MC7-UC7
2-10" to 12.7"
Flame cut to this line after erection.
2'12⅝"
USO-LSO
2-500 Ton Jacks-8" Runout
2-500 Ton Jacks-8" Runout
4-¾" Pl.
4-¾" Pl.
1" Bolt
1" Bolt
1" Bolt
1" Bolt
6-6-1½" L cut to fit over Jacks
6-6-1½" L cut to fit over Jacks
Note:
Material.
Silicon Steel S
Carbon Steel C
Heat Treated Steel H.T.
⅞" Rivets
CORRECT:
APPROVED:
BOARD OF CONSULTING ENGINEERS
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE – EAST BAY CROSSING
CANTILEVER STRUCTURE– PANEL UC7-USO
JACKING BRACKETS
SCALE IN FEET
CONTRACT NO 7
SUP. DRAWING NO.52
AUGUST - 1933







Note:-
Joints UC3 and UC5 are similar to UC1
Joint UC4 similar except for temporary erection member.
Material:
Carbon Steel except as noted
Heat Treated Steel H.T.

CORRECT:

APPROVED.

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

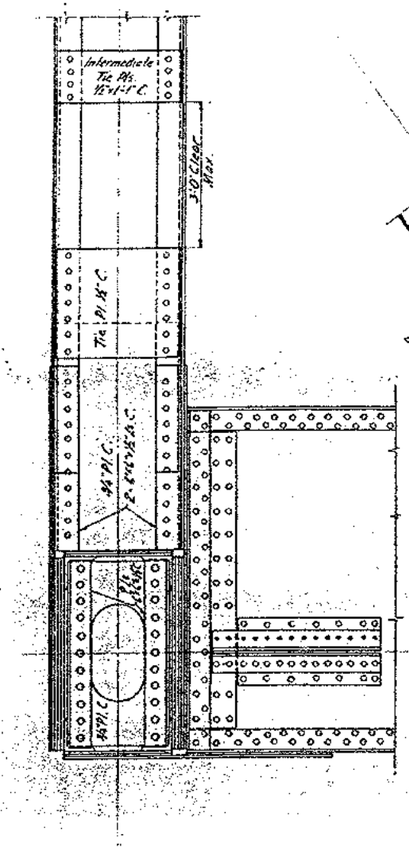
SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE - EAST BAY CROSSING
CANTILEVER SPAN--JOINT UC1

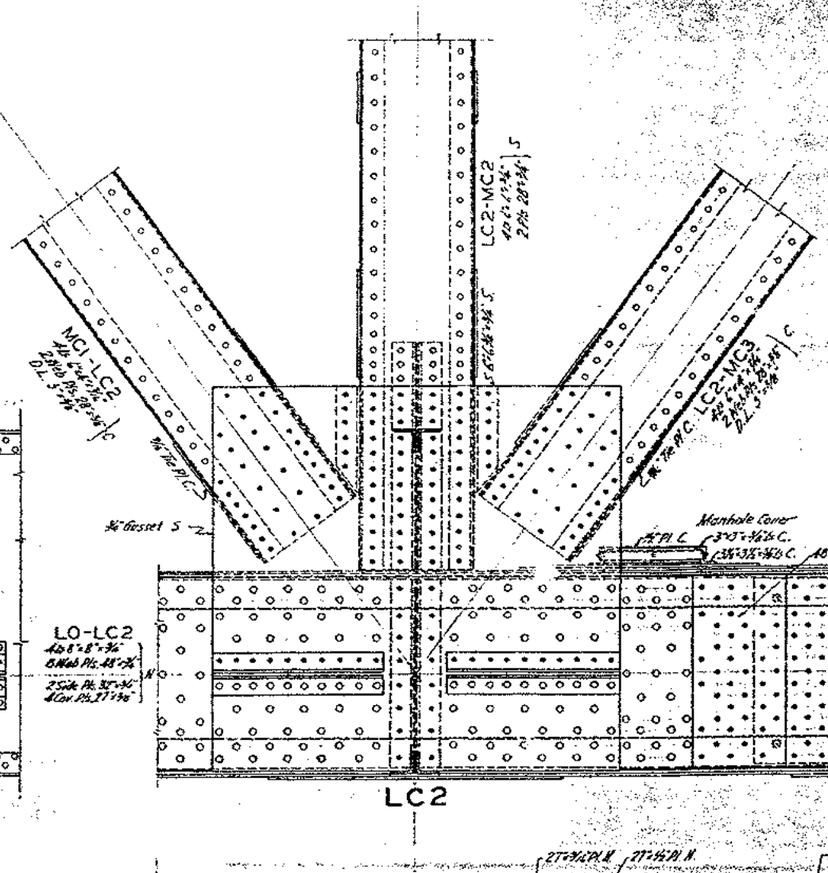
SCALE IN FEET
0 1 2

CONTRACT NO 7 SUPDRAWING NO 53

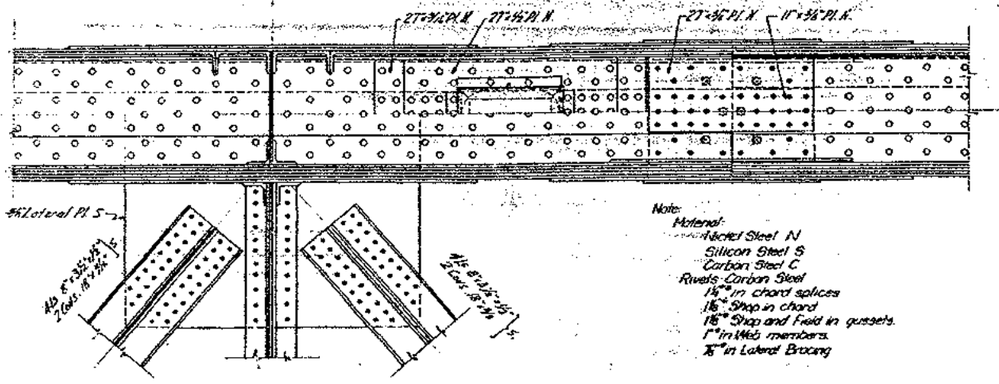
AUGUST - 1933



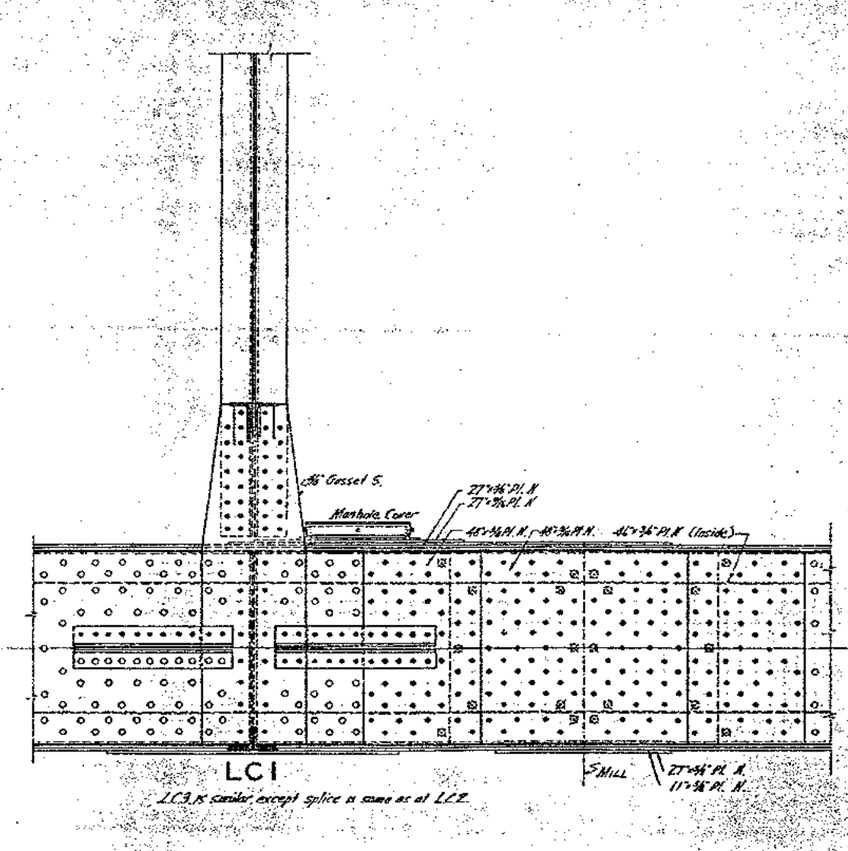
LO-LC2
4 Ls 8"x8"x¾"
8 Web Pls. 48"x⅞"
2 Side Pls. 37"x¾"
4 Cov Pls. 27"x⅝"



LC2-LC4
4 Ls 6"x6"x¾"
6 Web Pls. 48"x⅞"
2 Side Pls. 37"x¾"
4 Cov Pls. 27"x⅝"



Note:
Material:
Nickel Steel N
Silicon Steel S
Carbon Steel C
Rivets Carbon Steel
1¼" in chord splices
1⅛" Shop in chord
1⅛" Shop and Field in gussets.
1" in Web members.
⅞" in Lateral Bracing



LC1

LC3 is similar except splice is same as at LC2

CORRECT:

APPROVED:

Engineer of Design

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman

BOARD OF CONSULTING ENGINEERS

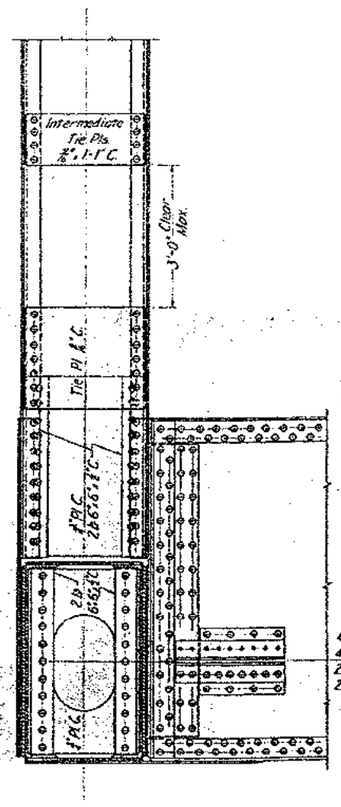
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

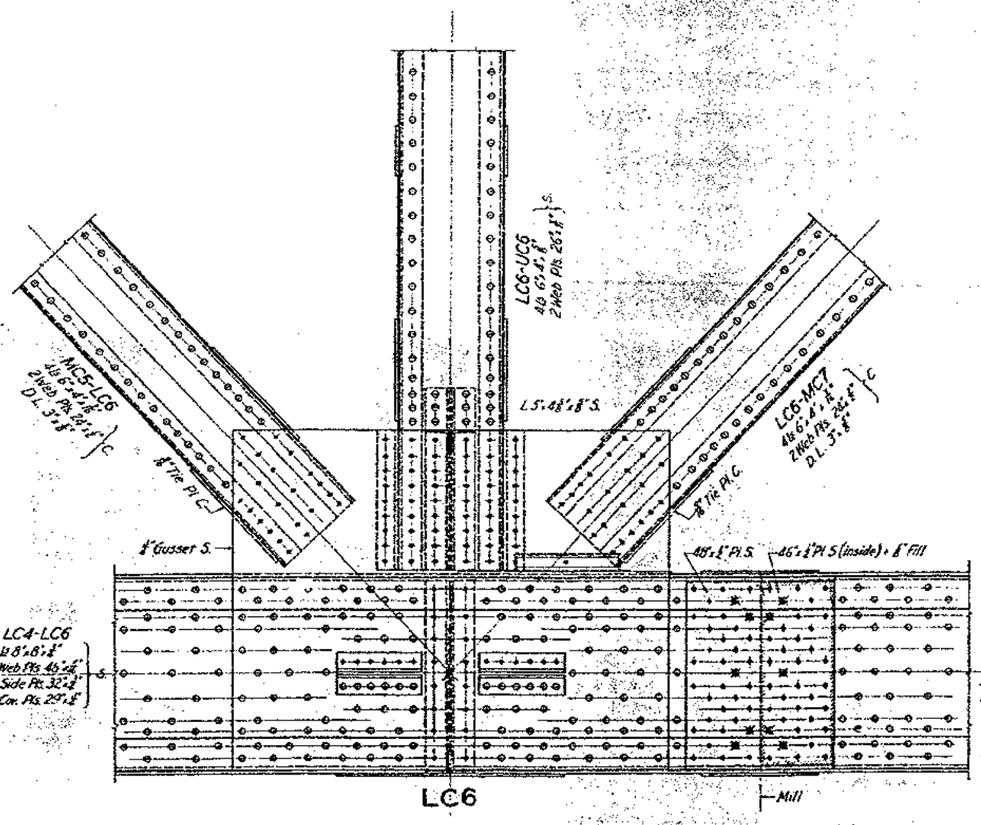
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE - EAST BAY CROSSING
CANTILEVER STRUCTURE
PANEL POINTS LC1, LC2, AND LC3

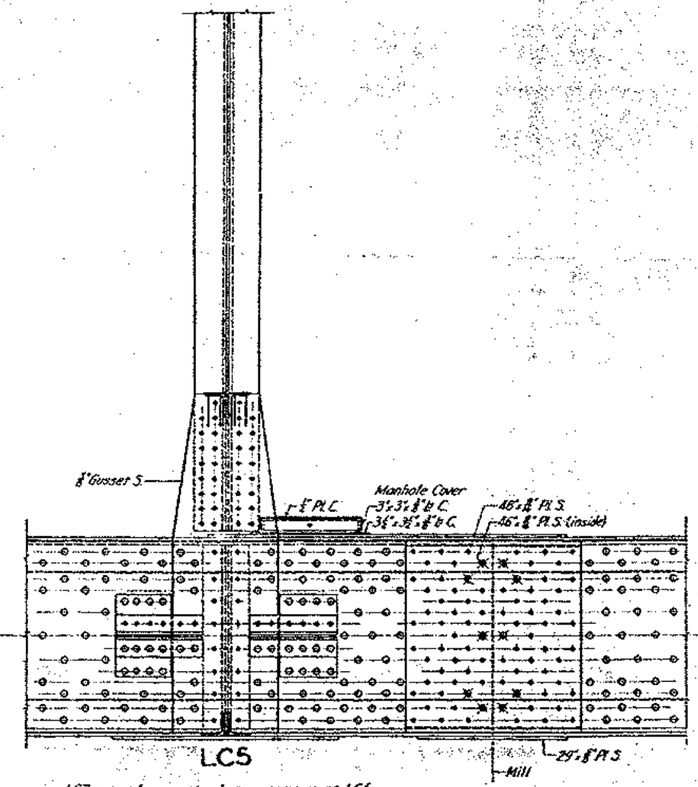
SCALE IN FEET 0 1 2

CONTRACT NO. 7 SUP. DRAWING NO. 54

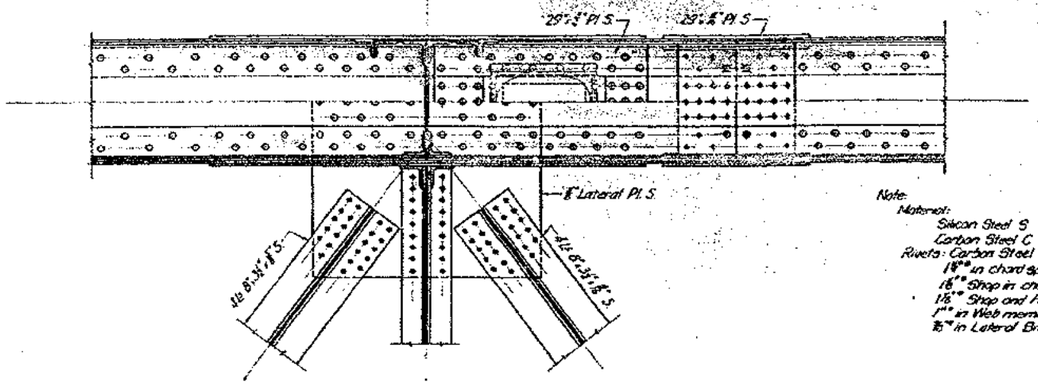
JULY - 1933







LC7 is similar except splice is same as at LC6



Note:
Material:
Silicon Steel S
Carbon Steel C
Rivets: Carbon Steel
⅞" in chord splices
⅞" Shop in chord
1⅛" Shop and Field in Gussets
⅞" in Web members
⅞" in Lateral Bracing

CORRECT:

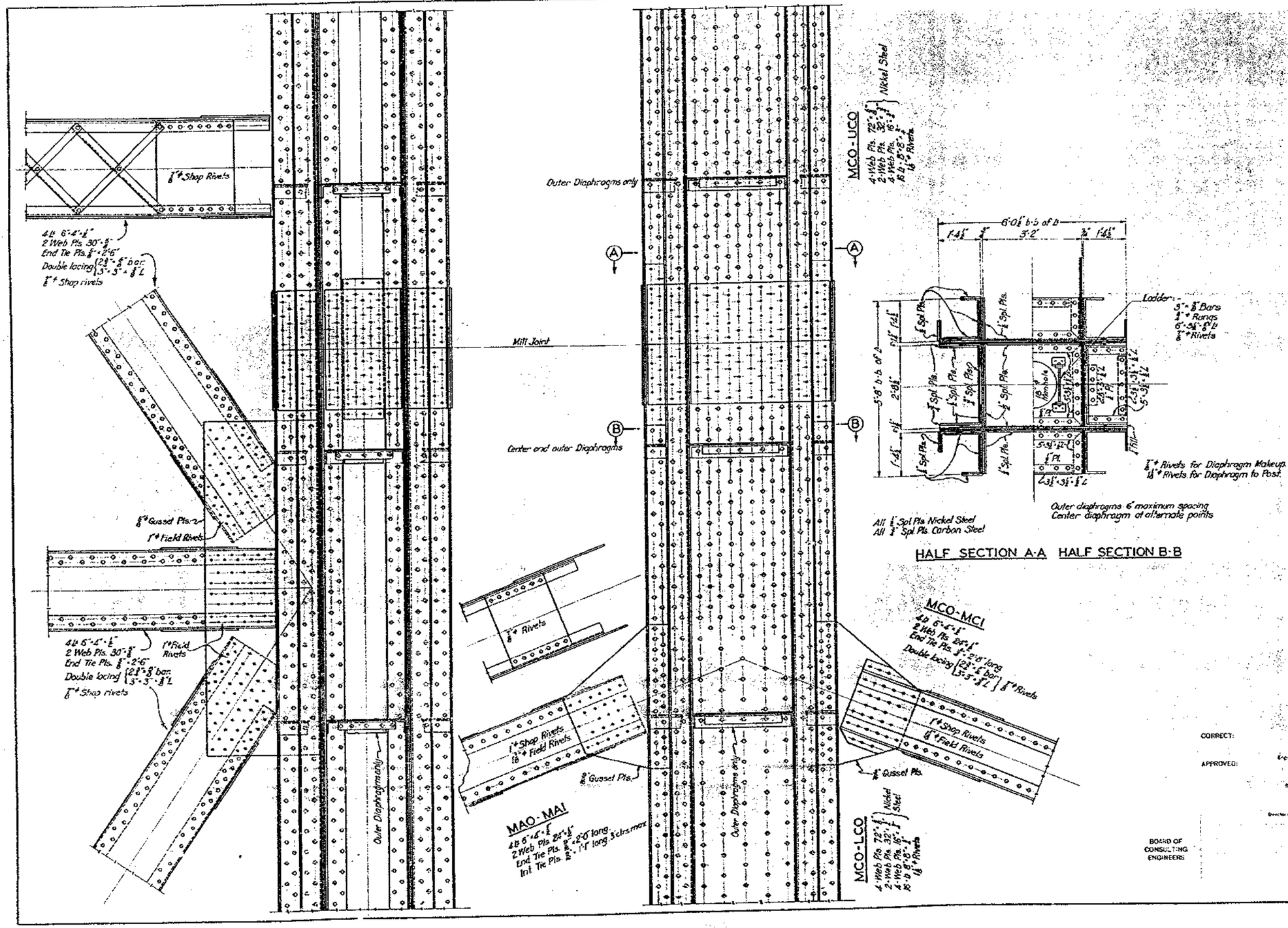
APPROVED.

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER STRUCTURE
PANEL POINTS LC5, LC6, & LC7

SCALE IN FEET

CONTRACT NO 7 SUP. DRAWING NO. 55
AUGUST - 1933



CORRECT:

APPROVED:

Engineer of Design

Bridge Engineer

Chief Engineer

Director of Public Works

Chairman

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

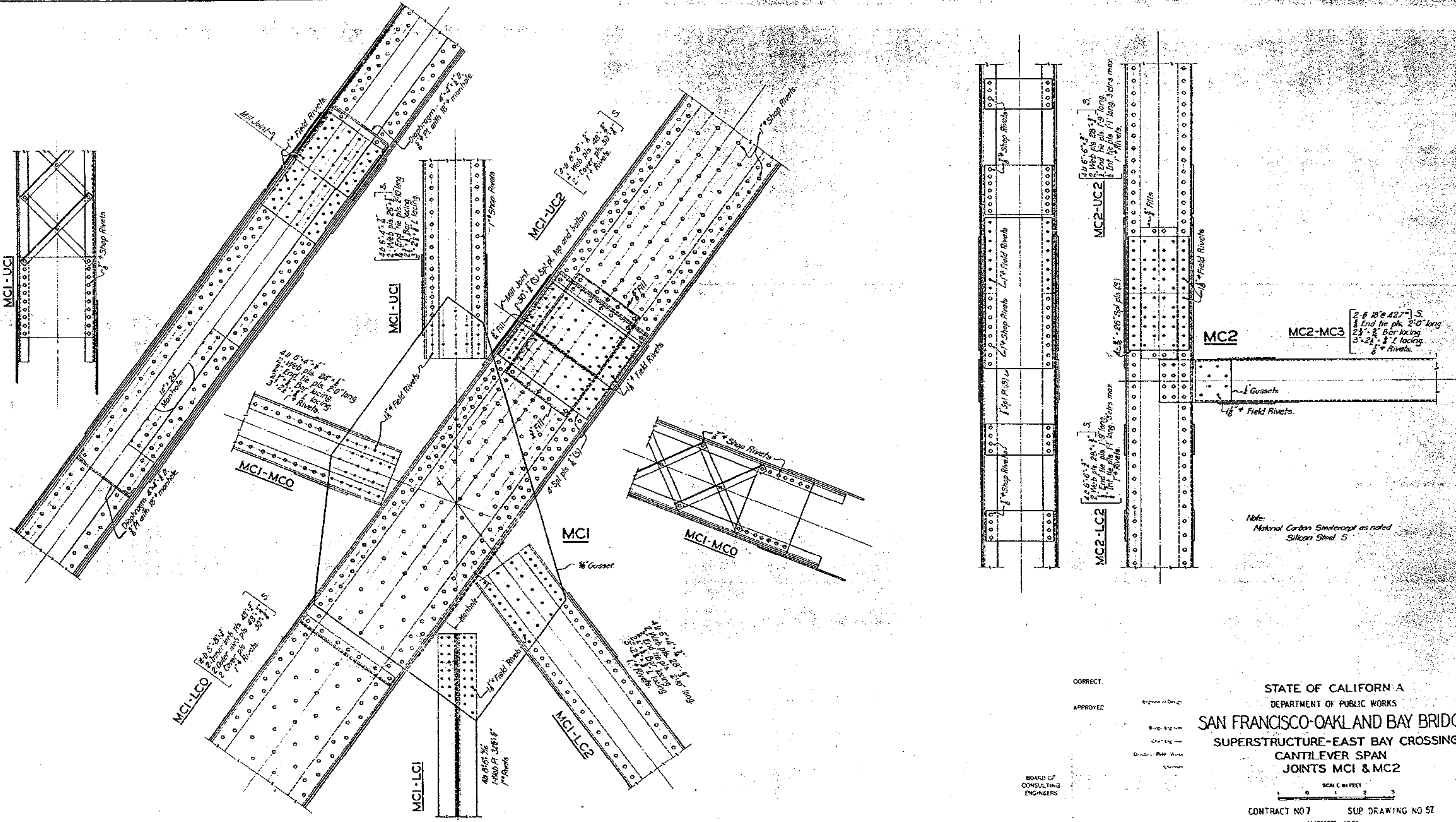
CANTILEVER SPAN

JOINT M_0

SCALE IN FEET 0 1 2 3 4

CONTRACT NO. 7 SUP DRAWING NO. 56.

SEPTEMBER-1933



CORRECT.

APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

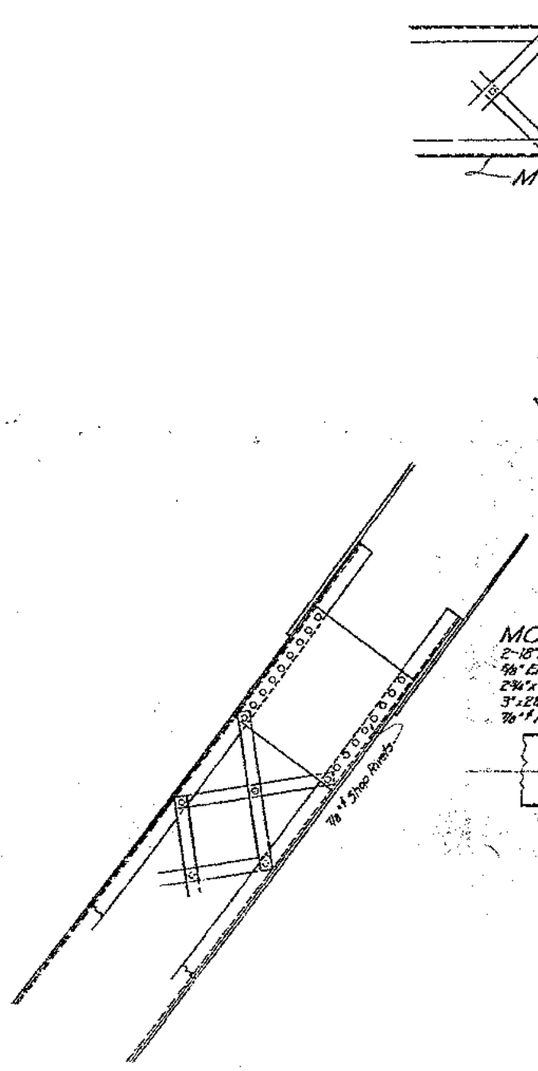
CANTILEVER SPAN

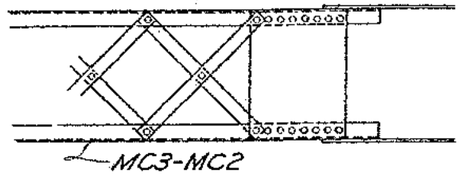
JOINTS MC1 & MC2

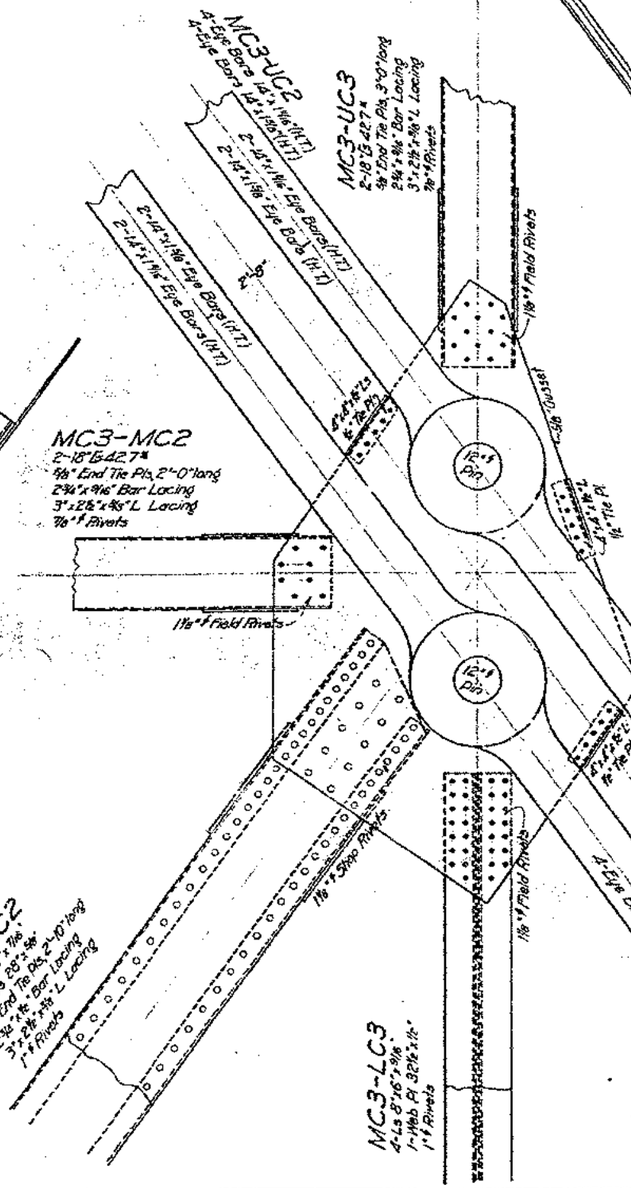
SCALE IN FEET

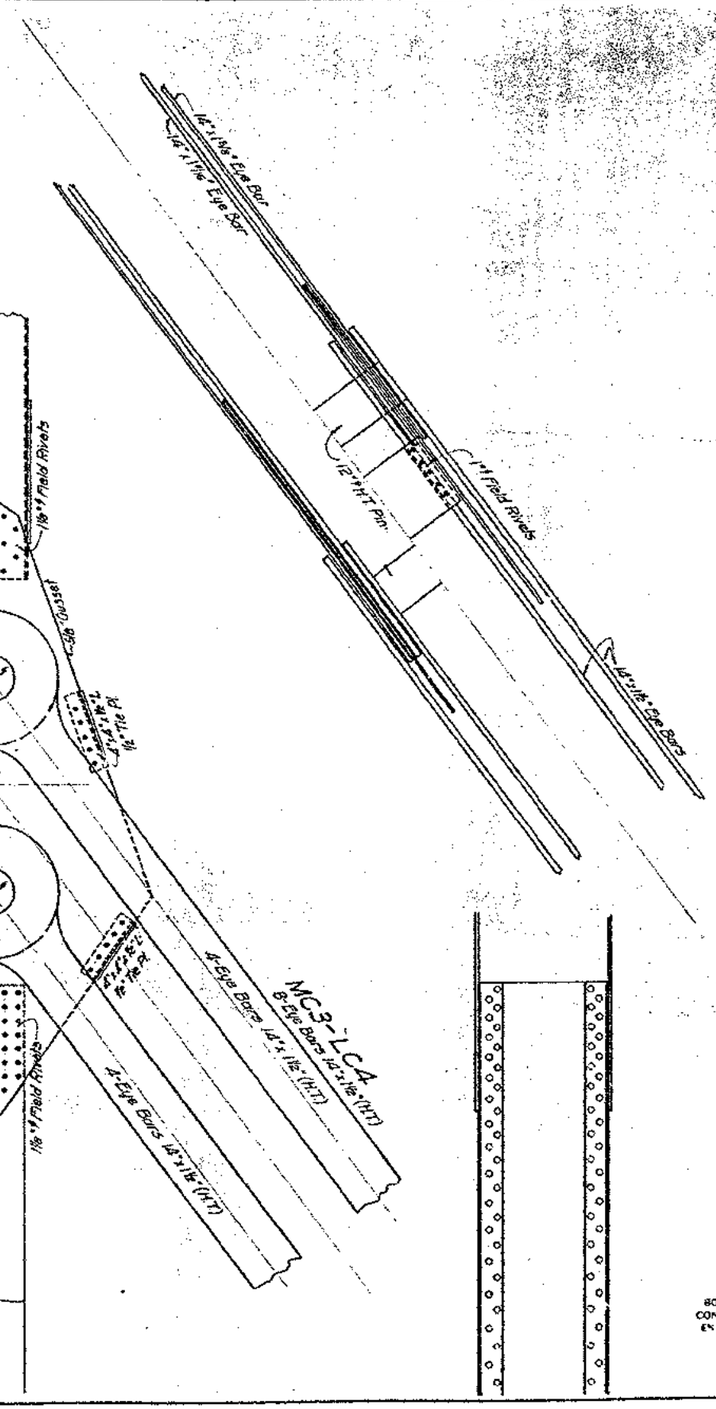
CONTRACT NO 7 SUP DRAWING NO 57

AUGUST-1933









Note:
Material Carbon steel except as noted
Heat Treated steel H.T.

CORRECT:

APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

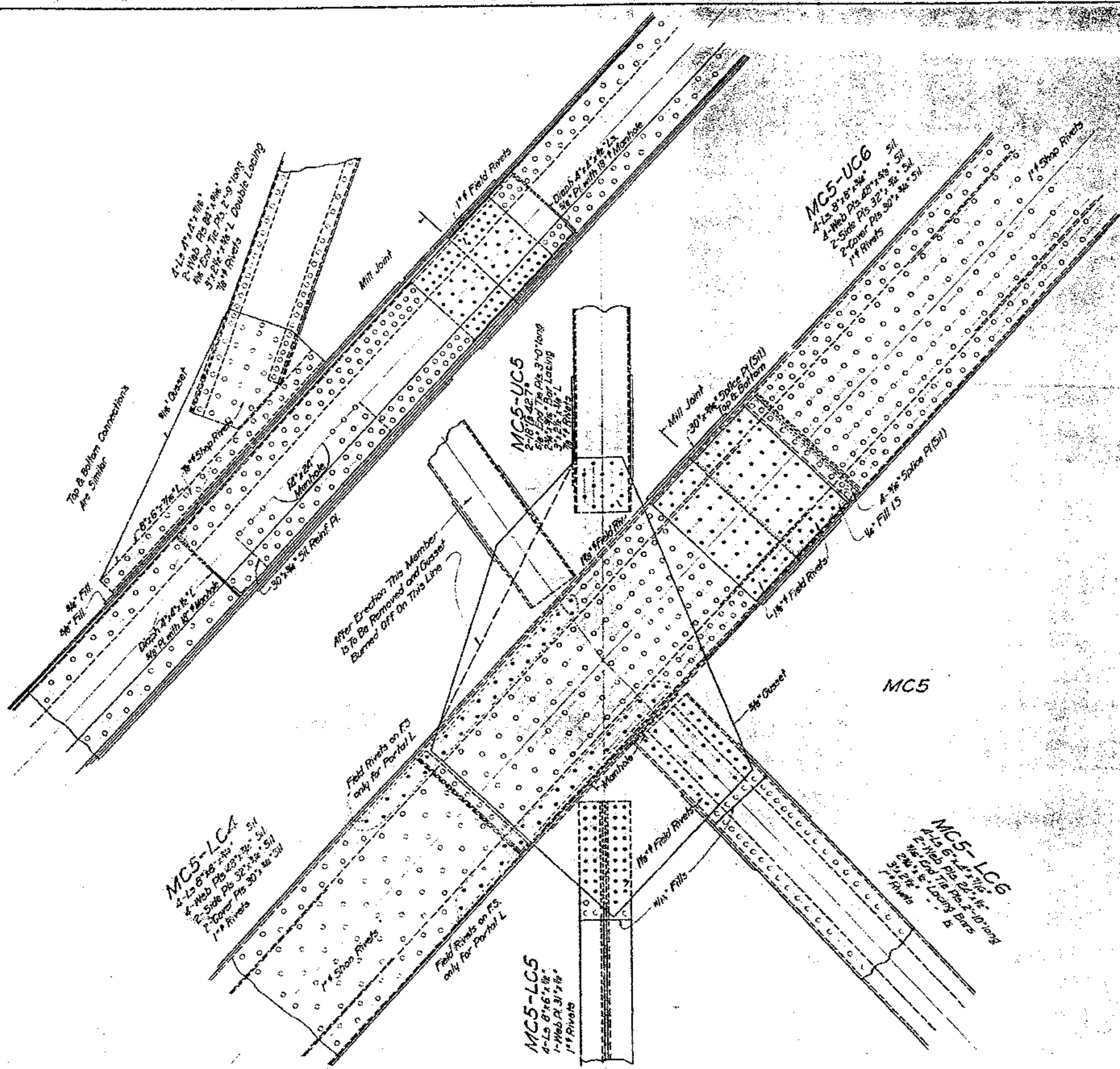
SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER SPAN
PANEL POINT MC3

SCALE IN FEET 0 1 2 3 4

CONTRACT NO 7 SUP DRAWING NO 58

SEPTEMBER- 1933



Note:
Material: Carbon steel except as noted
Silicon steel (Sil)

CORRECT:

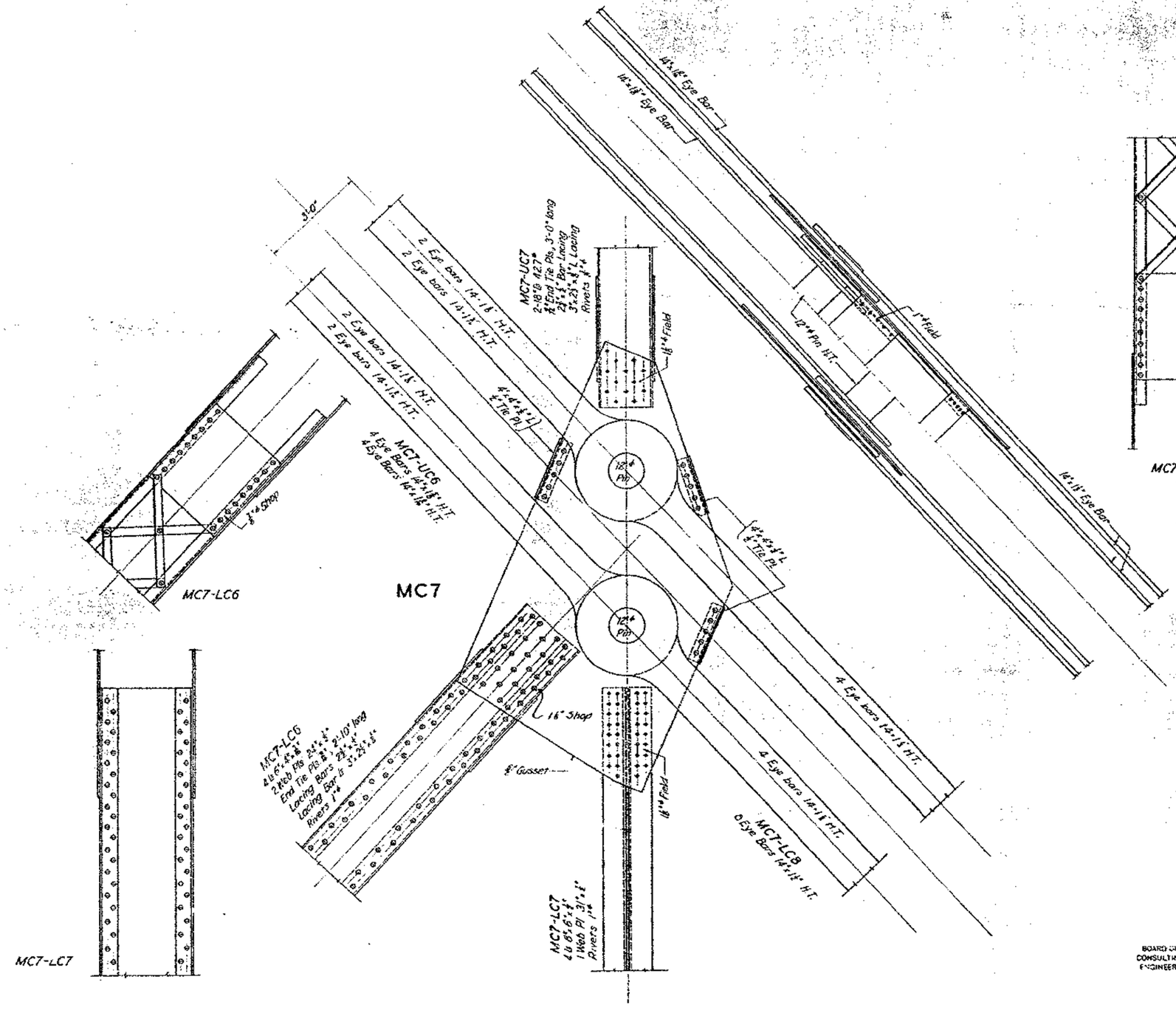
APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER SPAN
PANEL POINT MC5

SCALE IN FEET

CONTRACT NO 7 SUP.DRAWING NO 59
SEPTEMBER - 1933



NOTE

Material: Carbon steel except as noted
Heat treated steel H.T.

CORRECT:

APPROVED:

Engineer Director

Bridge Engineer

Chief Engineer

Director of Public Works

Governor

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

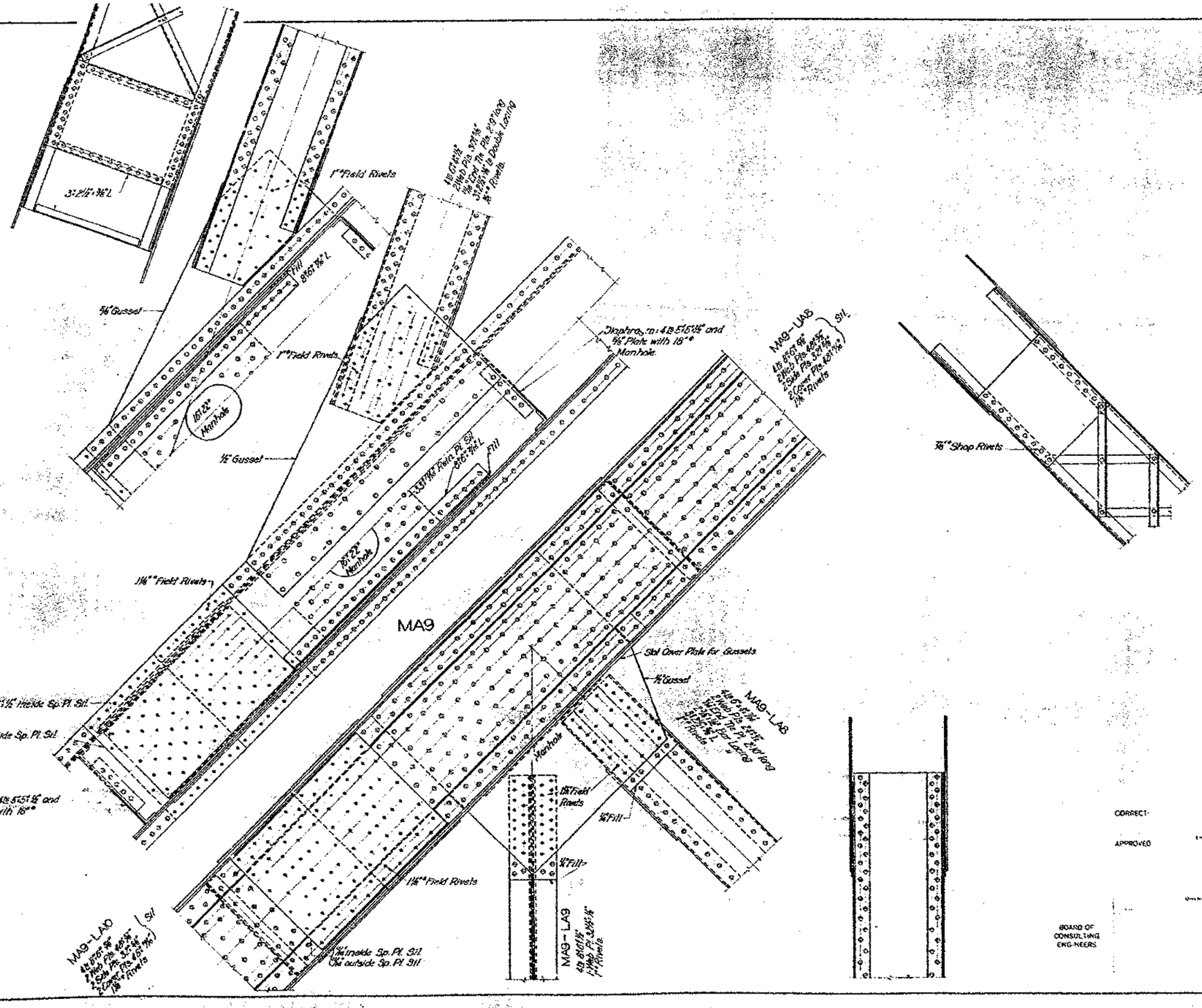
SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER SPAN - JOINT MC7

SCALE IN FEET 0 1 2 3

CONTRACT NO 7 SUP. DRAWING NO 60

SEPTEMBER - 1933



GENERAL NOTE

Material: Carbon Steel except as noted. Silicon Steel: Sil.

CORRECT:

APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

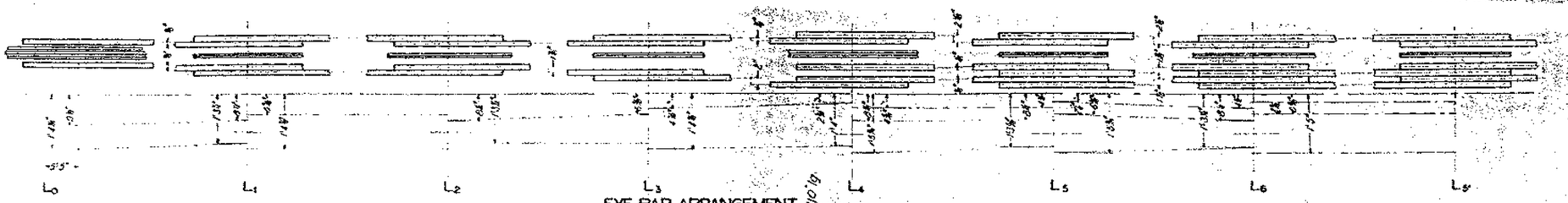
SUPERSTRUCTURE - EAST BAY CROSSING

JOINT MA9-ANCHOR SPAN

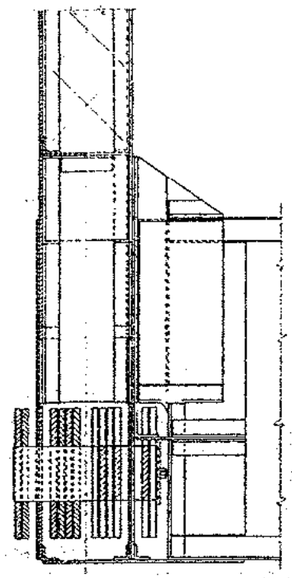
SCALE IN FEET 0 1 2 3

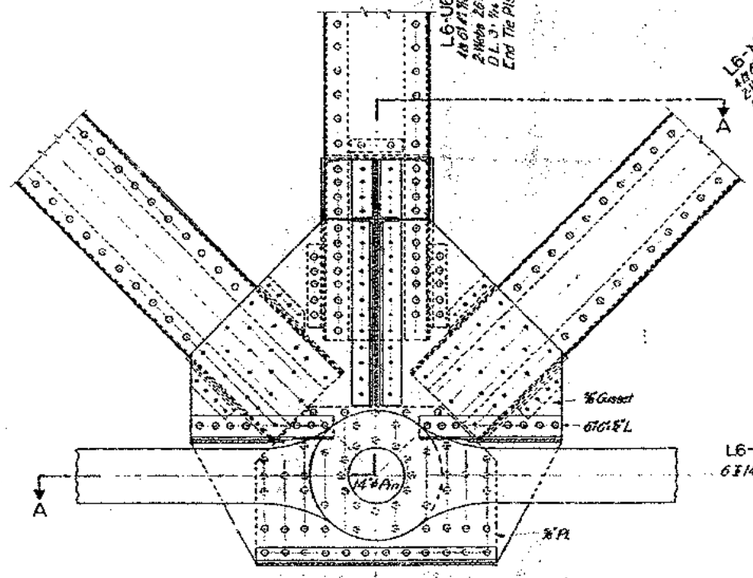
CONTRACT NO7 SUP. DRAWING NO.61

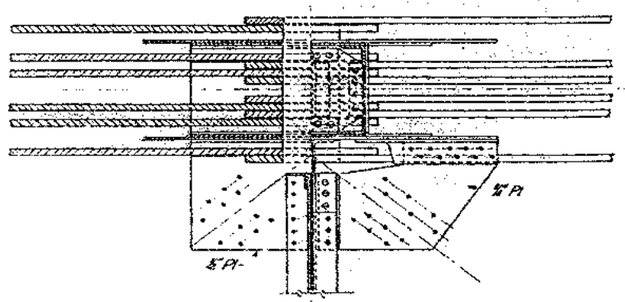
SEPTEMBER - 1933

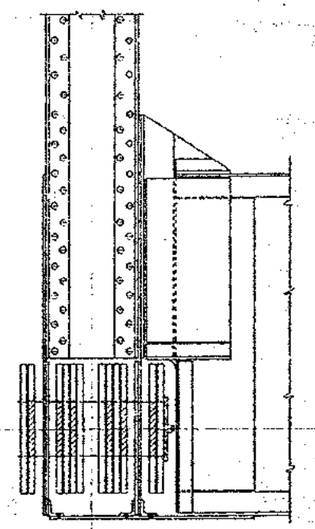


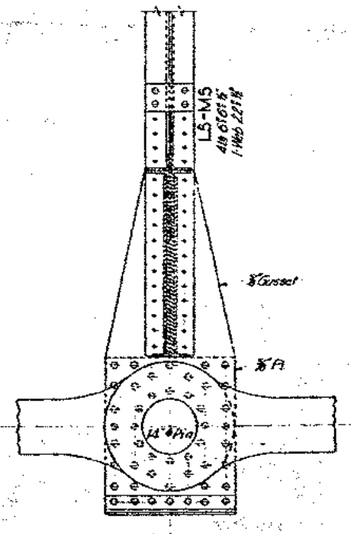
EYE BAR ARRANGEMENT











NOTE

Material: Carbon steel except as noted
Heat treated steel H.T.

Rivets: Carbon steel
1" ϕ except in Gusset Pls. which are 1⅛" ϕ

CORRECT:

APPROVED.

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

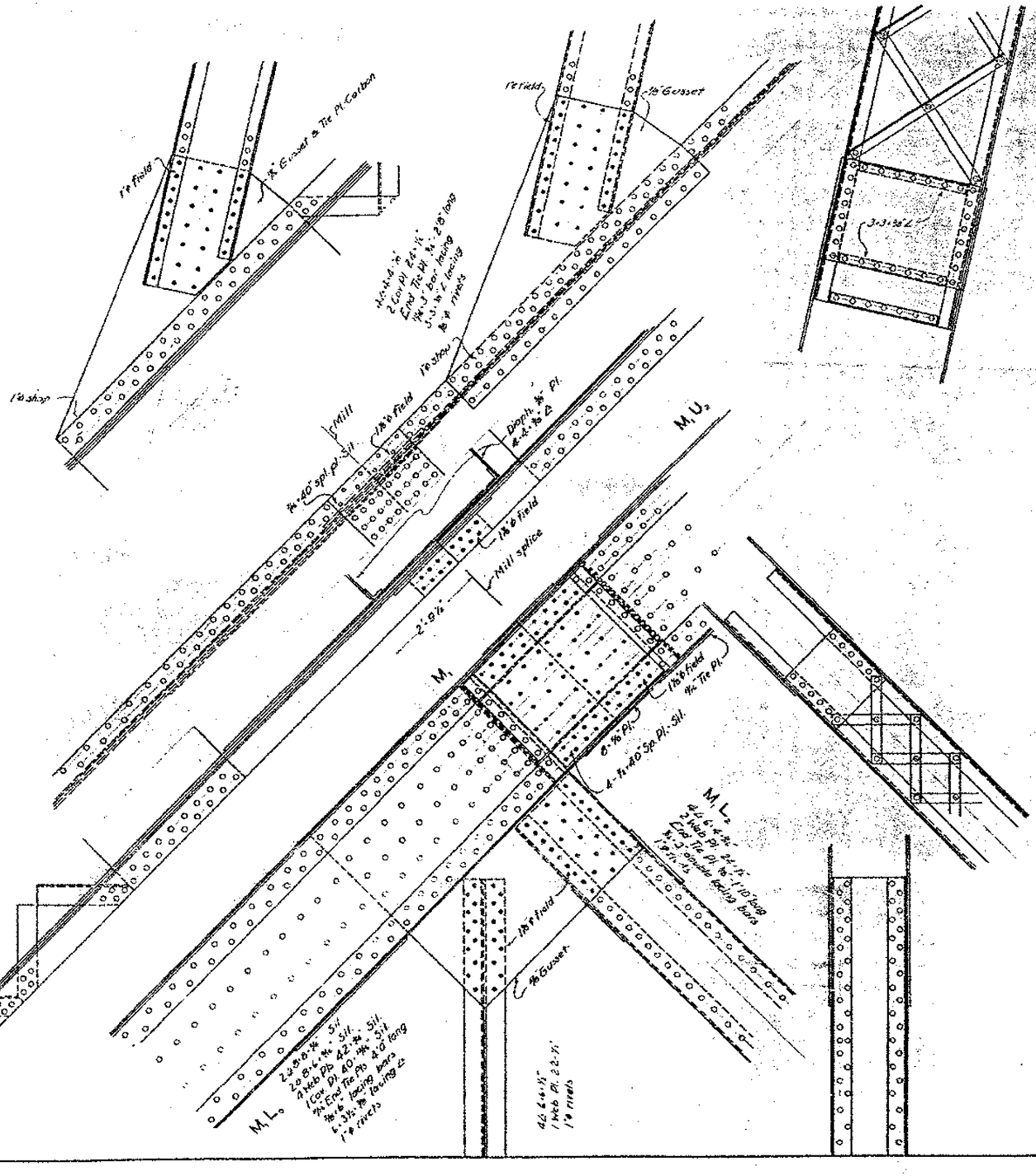
SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE - EAST BAY CROSSING
504 FT. SPANS
PANEL POINTS L1-L2-L3-L5-L6

SCALE IN FEET 0 1 2

CONTRACT NO 7 SUP. DRAWING NO. 62

SEPTEMBER - 1933



NOTE

Material: Carbon steel except as noted
Silicon steel - Sil.

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

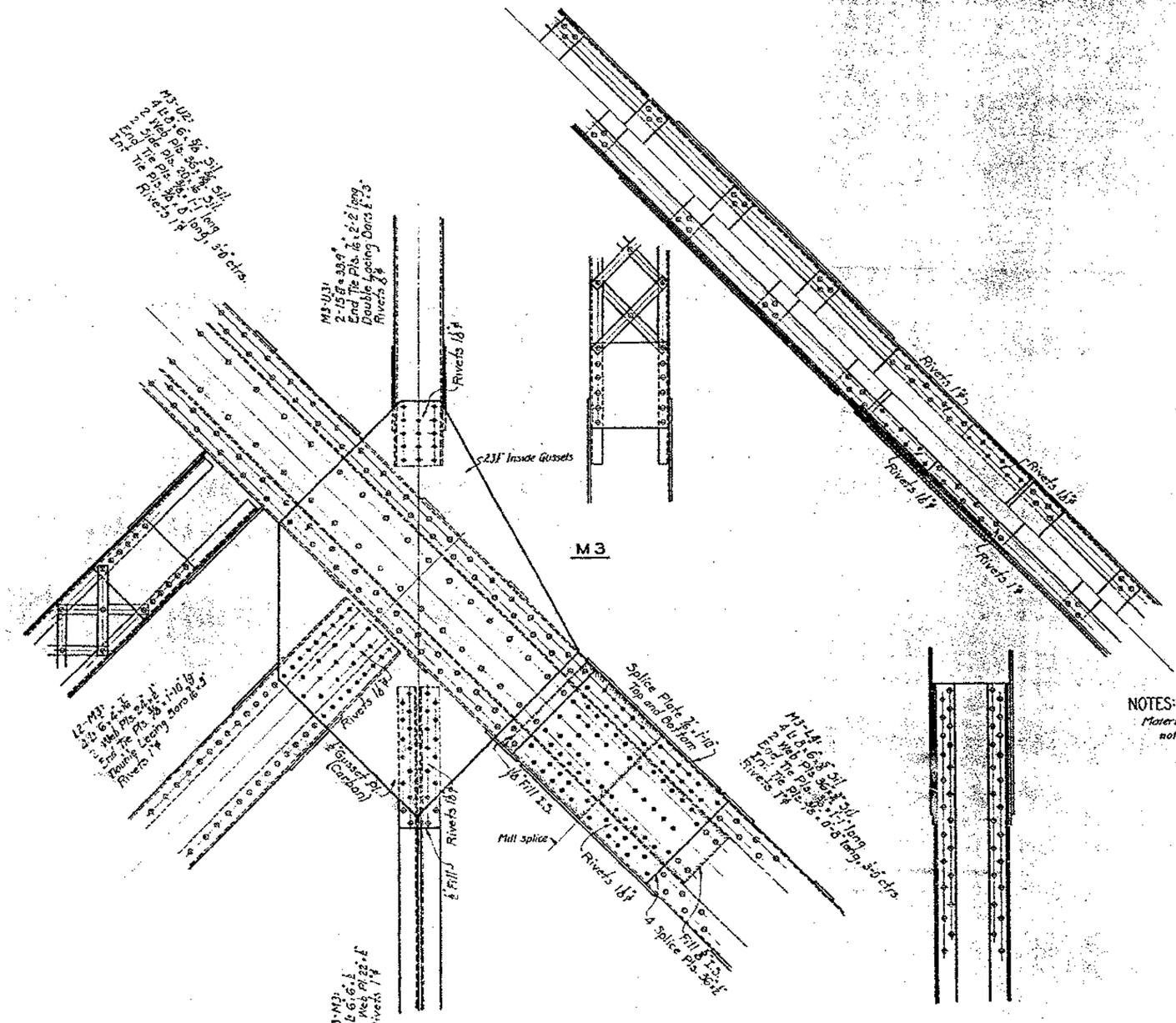
504 FT. SPANS

PANEL POINT M 1

SCALE IN FEET

CONTRACT NO. 7 SUP. DRAWING NO. 63

SEPTEMBER - 1933



NOTES:
Material: Carbon steel except where noted Silicon steel. - Sil.

CORRECT:

APPROVED:

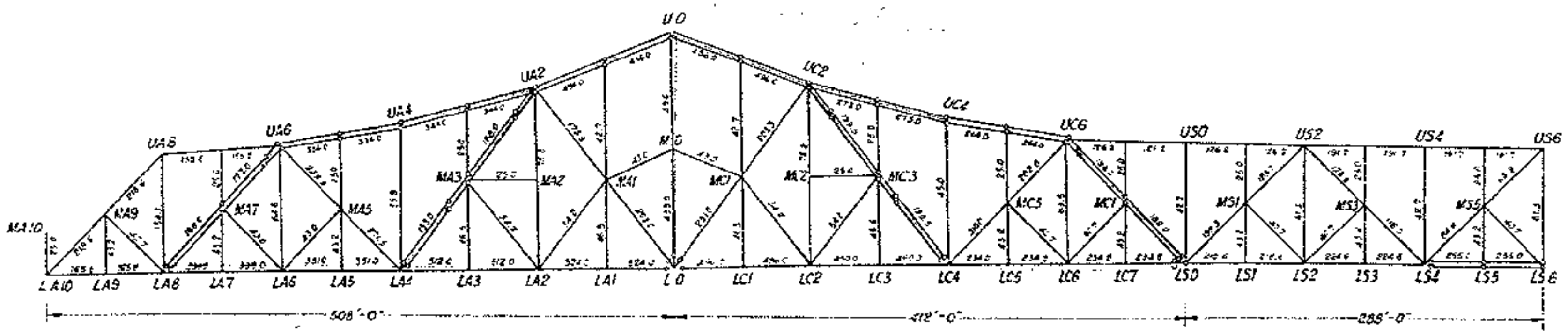
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING
504 FT. SPANS
PANEL POINTS M3-M5
SCALE IN FEET

CONTRACT NO. 7 SUP. DWG. NO 64
AUGUST - 1933



GENERAL NOTES

The average deformation for the two trusses was used in calculating the camber the members.

Cambered lengths were computed for Dead Load plus one-half Live Load stresses. (½ L.L. = 2020 lbs per lineal ft on the south truss and 1480 lbs per lineal ft on the north truss).

Modulus of elasticity of 29,000,000 #/□" was used for the Eye-bars and 30,000,000 #/□" for the built-up members.

Sub hangers are cambered for Dead Load plus one-half Floor-beam Live Load reaction.

Floor-Beam Live Load Reactions

48 Ft. Panel

North Truss	South Truss	
55	55	Upper Deck
214	232	Lower Deck
269	287	Total

55 Ft. Panel

North Truss	South Truss	
63	63	Upper Deck
244	260	Lower Deck
307	323	Total

ANCHOR ARM

Member	Length Ft-Ins	Length Inches	North Truss D.L. Str. Kips	North Truss ½ L.L. Str. Kips	North Truss D.L.+½ L.L.	North Truss Δ	North Truss Pin	North Truss ΣΔ	South Truss D.L. Str. Kips	South Truss ½ L.L. Str. Kips	South Truss D.L.+½ L.L.	South Truss Δ	South Truss Pin	South Truss ΣΔ	Av. ΣΔ	Fabric Length Inches	Fabric Length Ft-Ins.
L0-LA1	55'-0 1/8	660.125	-10293	-1350	-11643	-0.485	-0.016	-0.501	-9742	-1842	-11584	-0.483	-0.016	-0.499	-0.500	660.625	55'-0 5/8
LA1-LA2	55-0 1/8	660.125	-10293	-1350	-11643	-0.485		-0.485	-9742	-1842	-11584	-0.483		-0.483	-0.484	660.609	55-0 19/32
LA2-LA3	55-0 1/8	660.125	-10326	-1350	-11676	-0.498		-0.498	-9777	-1842	-11619	-0.495		-0.495	-0.496	660.621	55-0 5/8
LA3-LA4	55-0 1/8	660.125	-10326	-1350	-11676	-0.498		-0.498	-9777	-1842	-11619	-0.495		-0.495	-0.496	660.621	55-0 5/8
LA4-LA5	48-0	576.000	-4686	-644	-5330	-0.293		-0.293	-4426	-879	-5305	-0.291		-0.291	-0.292	576.292	48-0 9/32
LA5-LA6	48-0	576.000	-4686	-644	-5330	-0.293		-0.293	-4426	-879	-5305	-0.291		-0.291	-0.292	576.292	48-0 9/32
LA6-LA7	48-0	576.000	-4728	-644	-5372	-0.300		-0.300	-4471	-879	-5350	-0.299		-0.299	-0.300	576.300	48-0 5/16
LA7-LA8	48-0	576.000	-4728	-644	-5372	-0.300		-0.300	-4471	-879	-5350	-0.299		-0.299	-0.300	576.300	48-0 5/16
LA8-LA9	48-0	576.000	-1845	-250	-2095	-0.214		-0.214	-1726	-341	-2067	-0.211		-0.211	-0.212	576.212	48-0 7/32
LA9-LA10	48-0	576.000	-1845	-250	-2095	-0.214		-0.214	-1726	-341	-2067	-0.211		-0.211	-0.212	576.212	48-0 7/32
U0-UA1	59-3 1/8	711.125	+13366	+1690	+15056	+0.721	+0.031	+0.752	+12674	+2307	+14981	+0.717	+0.031	+0.748	+0.750	710.375	59-2 3/8
UA1-UA2	59-3 1/8	711.125	+13366	+1690	+15056	+0.721	+0.031	+0.752	+12674	+2307	+14981	+0.717	+0.031	+0.748	+0.750	710.375	59-2 3/8
UA2-UA3	57-1 5/32	685.156	+8228	+1097	+9325	+0.619	+0.031	+0.650	+7786	+1497	+9283	+0.616	+0.031	+0.647	+0.648	684.508	57-0 1/2
UA3-UA4	57-1 5/32	685.156	+8228	+1097	+9325	+0.619	+0.031	+0.650	+7786	+1497	+9283	+0.616	+0.031	+0.647	+0.648	684.508	57-0 1/2
UA4-UA5	48-7 5/16	583.312	+8028	+1068	+9096	+0.528	+0.031	+0.559	+7592	+1458	+9050	+0.525	+0.031	+0.556	+0.558	582.754	48-6 3/4
UA5-UA6	48-7 5/16	583.312	+8028	+1066	+9092	+0.528	+0.031	+0.559	+7592	+1456	+9050	+0.525	+0.031	+0.556	+0.558	582.754	48-6 3/4
UA6-UA7	48-0 27/32	576.844	+2085	+286	+2371	+0.293	+0.016	+0.309	+1971	+390	+2361	+0.291	+0.016	+0.307	+0.308	576.536	48-0 17/32
UA7-UA8	48-0 27/32	576.844	+2085	+286	+2371	+0.293		+0.293	+1971	+390	+2361	+0.291		+0.291	+0.292	576.552	48-0 9/16
L0-MA1	92-2 3/32	1106.094	-3543	-376	-3919	-0.675	-0.016	-0.651	-3381	-513	-3894	-0.671	-0.016	-0.687	-0.685	1106.783	92-2 25/32
MA1-UA2	92-2 3/32	1106.094	-3032	-326	-3358	-0.655	-0.016	-0.672	-2891	-444	-3335	-0.652	-0.016	-0.668	-0.670	1106.764	92-2 3/4
UA2-MA3	92-2 3/32	1106.094	+4477	+537	+5014	+1.099	+0.062	+1.161	+4260	+733	+4993	+1.094	+0.062	+1.156	+1.158	1104.936	92-0 15/16
MA3-LA4	92-2 3/32	1106.094	+4021	+487	+4508	+1.081	+0.062	+1.143	+3822	+665	+4487	+1.076	+0.062	+1.138	+1.140	1104.954	92-0 15/16
LA4-MA5	70-0 7/16	840.437	-4739	-605	-5344	-0.531		-0.531	-4492	-826	-5318	-0.529		-0.529	-0.530	840.967	70-0 31/32
MA5-UA6	70-0 7/16	840.437	-4316	-553	-4869	-0.541	-0.016	-0.557	-4089	-755	-4844	-0.539	-0.016	-0.555	-0.556	840.993	70-1
UA6-MA7	70-0 7/16	840.437	+4222	+570	+4792	+0.747	+0.062	+0.809	+3993	+778	+4771	+0.743	+0.062	+0.805	+0.807	839.630	69-11 5/8
MA7-LA8	70-0 7/16	840.437	+3560	+521	+4381	+0.730	+0.031	+0.761	+3648	+711	+4359	+0.726	+0.031	+0.757	+0.759	839.678	69-11 11/16
UA8-MA9	68-1 29/32	817.906	+2960	+407	+3367	+0.422		+0.422	+2796	+555	+3351	+0.420		+0.420	+0.421	817.485	68-1 1/2
MA9-LA10	68-1 29/32	817.906	+2631	+357	+2988	+0.376		+0.375	+2486	+487	+2973	+0.373		+0.373	+0.374	817.532	68-1 17/32
UA2-LA2	147-11	1775.000	+1332	+163	+1495	+1.007		+1.007	+1264	+222	+1486	+1.001		+1.001	+1.004	1773.996	147-10
* UA4-LA4	117-4	1408.000	+800	+126	+926	+0.726	+0.016	+0.742	+748	+172	+920	+0.715	+0.016	+0.731	+0.737	1407.263	117-3 1/4
UA6-LA6	102-0	1224.000	+1043	+142	+1185	+0.396		+0.396	+985	+194	+1179	+0.394		+0.394	+0.395	1223.605	101-11 19/32
UA8-LA8	96-9 3/8	1161.375	-2247	-271	-2518	-0.583		-0.583	-2135	-370	-2505	-0.580		-0.580	-0.582	1161.957	96-9 31/32
Δ MA1-LA1	73-11 1/2	887.500	+513	+153	+666	+0.400		+0.400	+479	+161	+640	+0.385		+0.385	+0.388	887.112	73-11 1/8
Δ MA3-LA3	73-11 1/2	887.500	+517	+153	+670	+0.392		+0.392	+483	+161	+644	+0.377		+0.377	+0.384	887.116	73-11 1/8
Δ MA5-LA5	51-0	612.000	+404	+134	+538	+0.254		+0.254	+375	+143	+518	+0.245		+0.245	+0.250	611.750	50-11 3/4
Δ MA7-LA7	51-0	612.000	+401	+134	+535	+0.253		+0.253	+372	+143	+515	+0.243		+0.243	+0.248	611.752	50-11 3/4
Δ MA9-LA9	45-10 21/32	550.667	+377	+134	+511	+0.229		+0.229	+349	+142	+491	+0.220		+0.220	+0.224	550.443	45-10 7/16
UA1-MA1	96-0	1152.000	-169	0	-169	-0.091	-0.016	-0.107	-165	0	-165	-0.091	-0.016	-0.107	-0.107	1152.107	96-0 3/32
UA3-MA3	58-8	704.000	-113	0	-113	-0.053	-0.016	-0.069	-113	0	-113	-0.053	-0.016	-0.069	-0.069	704.069	58-8 1/16
UA5-MA5	58-8	704.000	-106	0	-106	-0.049	-0.016	-0.065	-106	0	-106	-0.049	-0.016	-0.065	-0.065	704.065	58-8 1/16
UA7-MA7	45-10 11/16	550.687	-58	0	-58	-0.045		-0.045	-58	0	-58	-0.045		-0.045	-0.045	550.732	45-10 23/32
MA1-LA2	92-2 3/32	1106.094	-510	-55	-565	-0.239		-0.239	-489	-69	-558	-0.236		-0.236	-0.238	1106.332	92-2 11/32
MA3-LA2	92-2 3/32	1106.094	-456	-55	-511	-0.348	-0.016	-0.364	-434	-69	-503	-0.342	-0.016	-0.358	-0.361	1106.455	92-2 15/32
MA5-LA6	70-0 7/16	840.437	-423	-49	-472	-0.307		-0.307	-403	-67	-470	-0.305		-0.306	-0.306	840.743	70-0 3/4
MA7-LA6	70-0 7/16	840.437	-363	-49	-412	-0.268	-0.016	-0.284	-342	-67	-409	-0.266	-0.016	-0.282	-0.281	840.718	70-0 23/32
MA9-LA8	68-1 29/32	817.906	-330	-50	-380	-0.255		-0.255	-310	-68	-378	-0.253		-0.253	-0.254	818.160	68-2 5/32
U0-M0	96-0	1152.000	-10210	-1258	-11468	-0.891	-0.016	-0.907	-9710	-1736	-11446	-0.887	-0.016	-0.903	-0.905	1152.905	96-0 29/32
M0-L0	96-0	1152.000	-10644	-1275	-11919	-0.926	-0.016	-0.942	-10144	-1723	-11867	-0.922	-0.016	-0.938	-0.940	1152.940	96-0 15/16
M0-MA1	59-3 1/8	711.125	0	0	0				0	0	0					711.125	59-3 1/8
MA3-MA2	55-0 1/8	660.125	0	0	0				0	0	0					660.125	55-0 1/8
MA10-LA10	30-0	360.000	-140	-28	-168	-0.081		-0.081	-140	-28	-168	-0.081		-0.081	-0.081	360.081	30-0 1/16

CANTILEVER ARM

Member	Length Ft-Ins	Length Inches	North Truss D.L. Str. Kips	North Truss ½ L.L. Str. Kips	North Truss D.L.+½ L.L.	North Truss Δ	North Truss Pin	North Truss ΣΔ	South Truss D.L. Str. Kips	South Truss ½ L.L. Str. Kips	South Truss D.L.+½ L.L.	South Truss Δ	South Truss Pin	South Truss ΣΔ	Av. ΣΔ	Fabric Length Inches	Fabric Length Ft-Ins.
L0-LC1	55'-0 1/16	660.062	-9929	-1293	-11222	-0.498	-0.016	-0.514	-9400	-1765	-11165	-0.495	-0.016	-0.511	-0.512	660.574	55'-0 9/16
LC1-LC2	55-0 1/16	660.062	-9929	-1293	-11222	-0.498		-0.498	-9400	-1765	-11165	-0.495		-0.495	-0.496	660.558	55-0 9/16
LC2-LC3	55-0 1/16	660.062	-9971	-1293	-11264	-0.523		-0.523	-9450	-1765	-11215	-0.521		-0.521	-0.522	660.584	55-0 19/32
LC3-LC4	55-0 1/16	660.062	-9971	-1293	-11264	-0.523		-0.523	-9450	-1765	-11215	-0.521		-0.521	-0.522	660.584	55-0 19/32
LC4-LC5	48-0	576.000	-3220	-433	-3653	-0.299		-0.299	-3045	-592	-3637	-0.297		-0.297	-0.298	576.298	48-0 5/16
LC5-LC6	48-0	576.000	-3220	-433	-3653	-0.299		-0.299	-3045	-592	-3637	-0.297		-0.297	-0.298	576.298	48-0 5/16
LC6-LC7	48-0	576.000	-3260	-433	-3693	-0.302		-0.302	-3080	-592	-3672	-0.300		-0.300	-0.301	576.301	48-0 5/16
LC7-LC8	48-0	576.000	-3260	-433	-3693	-0.302	-0.016	-0.318	-3080	-592	-3672	-0.300	-0.016	-0.316	-0.317	576.317	48-0 5/16
U0-UC1	59-4 15/32	712.469	+13346	+1685	+15031	+0.721	+0.031	+0.752	+12670	+2305	+14975	+0.719	+0.031	+0.750	+0.751	711.718	59-3 23/32
UC1-UC2	59-4 1/32	712.031	+13346	+1685	+15031	+0.721	+0.031	+0.752	+12670	+2305	+14975	+0.719	+0.031	+0.750	+0.751	711.280	59-3 9/32
UC2-UC3	57-2 7/16	686.437	+7287	+959	+8246	+0.688	+0.031	+0.719	+6900	+1309	+8209	+0.685	+0.031	+0.716	+0.718	685.719	57-1 23/32
UC3-UC4	57-2 1/16	686.062	+7287	+959	+8246	+0.688	+0.031	+0.719	+6900	+1309	+8209	+0.685	+0.031	+0.716	+0.718	685.344	57-1 11/32
UC4-UC5	48-8 13/16	584.812	+7121	+938	+8059	+0.588	+0.031	+0.619	+6730	+1281	+8011	+0.584	+0.031	+0.615	+0.617	584.195	48-8 3/16
UC5-UC6	48-8 5/8	584.625	+7121	+938	+8059	+0.588	+0.031	+0.619	+6730	+1281	+8011	+0.584	+0.031	+0.615	+0.617	584.008	48-8
UC6-UC7	48-2	578.000	0	0	0	0.000	0	0	0	0	0	0	0	0	0	578.000	48-2
UC7-UC8	48-2	578.000	0	0	0	0.000		0.000	0	0	0		0.000	0.000	0	578.000	48-2
L0-MC1	92-2 5/8	1106.625	-4173	-465	-4638	-0.704	-0.016	-0.720	-3980	-634	-4614	-0.700	-0.016	-0.716	-0.718	1107.343	92-3 11/32
MC1-UC2	92-5 3/4	1109.750	-3665	-413	-4078	-0.700	-0.016	-0.716	-3500	-564	-4064	-0.698	-0.016	-0.714	-0.715	1110.465	92-6 15/32
UC2-MC3	92-5 3/4	1109.750	+5391	+663	+6054	+1.103	+0.062	+1.165	+5110	+905	+6015	+1.096	+0.062	+1.158	+1.162	1108.588	92-4 19/32
MC3-LC4	92-2 5/8	1106.625	+4956	+618	+5574	+1.105	+0.062	+1.167	+4700	+844	+5544	+1.099	+0.062	+1.161	+1.164	1105.461	92-1 15/32
LC4-MC5	70-1 7/16	841.437	-5570	-721	-6291	-0.546		-0.546	-5270	-984	-6254	-0.543		-0.543	-0.544	841.981	70-1 31/32
MC5-UC6	70-3 3/32	843.094	-5163	-672	-5835	-0.549	-0.016	-0.565	-4890	-917	-5807	-0.547	-0.016	-0.563	-0.564	843.658	70-3 21/32
UC6-MC7	70-3 3/32	843.094	+5117	+682	+5799	+0.830	+0.062	+0.892	+4840	+931	+5771	+0.826	+0.062	+0.888	+0.890	842.204	70-2 7/32
MC7-LC8	70-1 7/16	841.437	+4765	+631	+5396	+0.829	+0.031	+0.860	+4500	+865	+5365	+0.824	+0.031	+0.855	+0.858	840.579	70-0 9/16
MC1-LC2	92-2 5/8	1106.625	-519	-51	-570	-0.388		-0.388	-498	-69	-567	-0.386		-0.386	-0.387	1107.012	92-3
LC2-MC3	92-2 5/8	1106.625	-441	-58	-499	-0.340	-0.016	-0.356	-426	-71	-497	-0.338	-0.016	-0.354	-0.355	1106.980	92-2 31/32
MC5-LC6	70-1 7/16	841.437	-410	-49	-459	-0.299		-0.299	-390	-67	-457	-0.298		-0.298	-0.298	841.735	70-1 3/4
LC6-MC7	70-1 7/16	841.437	-356	-49	-405	-0.279	-0.016	-0.295	-336	-67	-403	-0.278	-0.016	-0.294	-0.294	841.731	70-1 23/32
UC1-MC1	96-1 1/8	1153.125	-157	0	-157	-0.119	-0.016	-0.135	-157	0	-157	-0.119	-0.016	-0.135	-0.135	1153.260	96-1 1/4
UC3-MC3	59-0 11/16	708.687	-103	0	-103	-0.048	-0.016	-0.064	-103	0	-103	-0.048	-0.016	-0.064	-0.064	708.751	59-0 3/4
* UC4-LC4	117-11	1415.000	+672	+103	+775	+0.724	+0.016	+0.740	+632	+141	+773	+0.722	+0.016	+0.738	+0.739	1414.261	117-10 1/4
UC5-MC5	59-0 1/16	708.062	-89	0	-89	-0.042	-0.016	-0.058	-89	0	-89	-0.042	-0.016	-0.058	-0.058	708.120	59-0 1/8
UC6-LC6	102-4	1228.000	+982	+142	+1124	+0.632		+0.632	+924	+196	+1120	+0.630		+0.630	+0.631	1227.369	102-3 3/8
UC2-LC2	148-3	1779.000	+1348	+163	+1511	+1.027		+1.027	+1281	+222	+1503	+1.015		+1.105	+1.021	1777.979	148-1 31/32
UC7-MC7	48-5 3/16	581.187	-45	0	-45	-0.035		-0.035	-45	0	-45	-0.035		-0.035	-0.035	581.222	48-5 7/32
Δ MC1-LC1	73-11 29/32	887.906	+510	+152	+662	+0.421		+0.421	+476	+162	+638	+0.406		+0.406	+0.413	887.492	73-11 1/2
Δ MC3-LC3	73-11 29/32	887.906	+500	+152	+652	+0.415		+0.415	+465	+162	+627	+0.399		+0.399	+0.407	887.499	73-11 1/2
Δ MC5-LC5	51-1 5/32	613.156	+387	+134	+521	+0.246		+0.246	+358	+144	+502	+0.237		+0.237	+0.241	612.915	51-0 29/32
Δ MC7-LC7	51-1 5/32	613.156	+398	+134	+532	+0.252		+0.252	+369	+144	+513	+0.243		+0.243	+0.248	612.908	51-0 29/32
M0-MC1	59-3 29/32	711.906	0	0	0	0.000		0.000	0	0	0	0.000		0.000	0.000	711.906	59-3 29/32
MC2-MC3	55-0 31/32	660.969	0	0	0	0.000		0.000	0	0	0	0.000		0.000	0.000	660.969	55-0 31/32

SUSPENDED SPAN

Member	Length Ft-Ins	Length Inches	North Truss D.L. Str. Kips	North Truss ½ L.L. Str. Kips	North Truss D.L.+½ L.L.	North Truss Δ	North Truss Pin	North Truss ΣΔ	South Truss D.L. Str. Kips	South Truss ½ L.L. Str. Kips	South Truss D.L.+½ L.L.	South Truss Δ	South Truss Pin	South Truss ΣΔ	Av. ΣΔ	Fabric Length Inches	Fabric Length Ft-Ins.
LS0-LS1	48'-0"	576.000	+2849	+390	+3239	+0.284		+0.284	+2689	+533	+3222	+0.283		+0.283	+0.284	575.716	47'-11 23/32
LS1-LS2	48-0	576.000	+2849	+390	+3239	+0.284		+0.284	+2689	+533	+3222	+0.283		+0.283	+0.284	575.716	47-11 23/32
LS2-LS3	48-0	576.000	+2840	+390	+3230	+0.276		+0.276	+2680	+533	+3213	+0.275		+0.275	+0.276	575.724	47-11 23/32
LS3-LS4	48-0	576.000	+2840	+390	+3230	+0.276		+0.276	+2680	+533	+3213	+0.275		+0.275	+0.276	575.724	47-11 23/32
LS4-LS5	48-0	576.000	+4881	+675	+5556	+0.433	+0.031	+0.464	+4604	+921	+5525	+0.430	+0.031	+0.461	+0.462	575.538	47-11 17/32
LS5-LS6	48-0	576.000	+4881	+675	+5556	+0.433	+0.031	+0.464	+4604	+921	+5525	+0.430	+0.031	+0.461	+0.462	575.538	47-11 17/32
US0-US1	48-1 1/32	577.031	0	0	0	0.000		0	0	0	0	0.000		0.000	0.000	577.031	48-1 1/32
US1-US2	48-1 1/32	577.031	0	0	0	0.000		0	0	0	0	0.000		0.000	0.000	577.031	48-1 1/32
US2-US3	48-1 1/32	577.031	-4123	-568	-4691	-0.461		-0.461	-3890	-776	-4666	-0.458		-0.458	-0.460	577.491	48-1 1/2
US3-US4	48-1 1/32	577.031	-4123	-568	-4691	-0.461		-0.461	-3890	-776	-4666	-0.458		-0.458	-0.460	577.491	48-1 1/2
US4-US5	48-1 1/32	577.031	-4123	-568	-4691	-0.461		-0.461	-3890	-776	-4666	-0.458		-0.458	-0.460	577.491	48-1 1/2
US5-US6	48-1 1/32	577.031	-4123	-568	-4691	-0.461		-0.461	-3890	-776	-4666	-0.458		-0.458	-0.460	577.491	48-1 1/2
LS0-MS1	67-11 21/32	815.656	-4028	-553	-4581	-0.624		-0.624	-3802	-755	-4557	-0.620		-0.620	-0.622	816.278	68-0 9/32
MS1-US2	68-1 1/8	817.125	-3665	-501	-4166	-0.598		-0.598	-3459	-685	-4144	-0.594		-0.595	-0.596	817.721	68-1 23/32
US2-MS3	68-1 1/8	817.125	+2165	+300	+2465	+0.506		+0.506	+2042	+410	+2452	+0.503		+0.503	+0.504	816.601	68-0 19/32
MS3-LS4	67-11 21/32	815.656	+1814	+252	+2066	+0.478		+0.478	+1711	+343	+2054	+0.475		+0.475	+0.476	815.180	67-11 3/16
LS4-MS5	67-10 7/32	814.219	-1072	-151	-1223	-0.391		-0.391	-1010	-206	-1216	-0.389		-0.389	-0.390	814.609	67-10 19/32
MS5-US6	67-11 11/16	815.687	-721	-102	-823	-0.329		-0.329	-680	-139	-819	-0.327		-0.327	-0.328	816.015	68-0
Δ MS1-LS1	48-1 9/32	577.281	+387	+134	+521	+0.232		+0.232	+358	+143	+501	+0.223		+0.223	+0.228	577.053	48-1 1/16
MS1-LS2	67-11 21/32	815.656	-364	-51	-415	-0.277		-0.277	-343	-68	-411	-0.275		-0.275	-0.276	815.932	67-11 15/16
US1-MS1	48-5 1/8	581.125	-48	0	-48	-0.037		-0.037	-48	0	-48	-0.037		-0.037	-0.037	581.162	48-5 5/32
US2-LS2	96-4 1/8	1156.125	+931	+144	+1075	+0.591		+0.591	+873	+194	+1067	+0.587		+0.587	+0.689	1155.436	96-3 7/16
US3-MS3	48-1 1/32	577.031	-56	0	-56	-0.043		-0.043	-56	0	-56	-0.043		-0.043	-0.043	577.074	48-1 1/16
Δ MS3-LS3	48-1 9/32	577.281	+388	+134	+522	+0.232		+0.232	+359	+143	+502	+0.224		+0.224	+0.228	577.053	48-1 1/16
* US4-LS4	96-1 1/32	1153.031	-215	-27	-242	-0.113		-0.113	-215	-27	-242	-0.113		-0.113	-0.113	1153.144	96-1 5/32
US5-MS5	48-1 1/32	577.031	-57	0	-57	-0.044		-0.044	-57	0	-57	-0.044		-0.044	-0.044	577.075	48-1 1/16
Δ MS5-LS5	47-11 7/32	575.219	+399	+134	+533	+0.237	+0.016	+0.253	+370	+143	+513	+0.228	+0.016	+0.244	+0.248	574.971	47-10 31/32
US6-LS6	96-0	1152.000	+936	+144	+1080	+0.592	+0.016	+0.608	+878	+194	+1072	+0.587	+0.016	+0.603	+0.606	1151.394	95-11 13/32
LS2-MS3	67-11 21/32	815.656	-351	-51	-402	-0.269		-0.269	-330	-68	-398	-0.266		-0.266	-0.268	815.924	67-11 15/16
MS5-LS6	67-10 7/32	814.219	-350	-51	-401	-0.267		-0.267	-330	-68	-398	-0.266		-0.268	-0.266	814.485	67-10 1/2
* US0-LS0	96-9 1/4	1161.250	-207	-28	-235	-0.103		-0.103	-207	-28	-235	-0.103		-0.103	-0.103	1161.353	96-9 11/32

Δ Cambered for dead load plus one half floorbeam live load reaction.
* Length taken as 30'-0" for floorbeam dead and live load. Full length taken for upper panel and post dead load.

CORRECT:
Engineer of Design

APPROVED:
Bridge Engineer
Chief Engineer
Director of Public Works
Chairman

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING
CANTILEVER STRUCTURE
CAMBERED LENGTHS

SCALE IN FEET

CONTRACT NO. 7 — SUP. DRAWING NO. 89A
JULY 1934

NORTH TRUSSES

SPAN YB1-YB2

Member	Stresses Dead	Stresses ½ Live	Stresses Total	Geometric Length ins	Gross Area	A/AE ins	Cambered Length ins	Cambered Length ft and ins
L0-L1								
L1-L2								
L2-L3								
L3-L4								
L4-L5								
L5-L6								
L6-L7								
L7-L8								
U0-U1								
U1-U2								
U2-U3								
U3-U4								
U4-U5								
U5-U6								
U6-U7								
U7-U8								
L0-U1								
U1-L2								
L2-U3								
U3-L4								
L4-U5								
U5-L6								
L6-U7								
U7-L8								
U1-L1								
U2-L2								
U3-L3								
U4-L4								
U5-L5								
U6-L6								
U7-L7								
U8-L8								

Camber same as South Truss

SPAN YB2-YB3

Member	Stresses Dead	Stresses ½ Live	Stresses Total	Geometric Length ins	Gross Area	A/AE ins	Cambered Length ins	Cambered Length ft and ins
L0-L1	+1102	+190	+1292	453.187	90.8	.215	452.972	37-8 ¾
L1-L2	+1102	+190	+1292	432.000	90.8	.205	431.795	35-11 ⅝
L2-L3	+2320	+395	+2715	do	141.8	.275	431.725	35-11 ⅝
L3-L4	+2320	+395	+2715	do	141.8	.275	431.725	35-11 ⅝
L4-L5	+2330	+396	+2726	do	141.8	.277	431.723	35-11 ⅝
L5-L6	+2330	+396	+2726	do	141.8	.277	431.723	35-11 ⅝
L6-L7	+1120	+193	+1313	432.000	90.8	.208	431.792	35-11 ⅝
L7-L8	+1120	+193	+1313	463.562	90.8	.224	463.338	38-7 ¼
U0-U1	-	-	-	453.187	42.2	-	453.187	37-9 ¾
U1-U2	-1860	-318	-2178	432.000	114.4	.269	432.249	36-0 ⅜
U2-U3	-1860	-318	-2178	do	114.4	.269	432.249	36-0 ⅜
U3-U4	-2480	-421	-2901	do	154.3	.270	432.270	36-0 ⅜
U4-U5	-2480	-421	-2901	do	154.3	.270	432.270	36-0 ⅜
U5-U6	-1870	-320	-2190	do	114.4	.271	432.271	36-0 ⅜
U6-U7	-1870	-320	-2190	432.000	114.4	.271	432.271	36-0 ⅜
U7-U8	-	-	-	463.562	42.2	-	463.562	38-7 ¼
L0-U1	+1560	+269	+1829	643.428	103.3	.379	643.807	53-7 ¼
U1-L2	+1105	+187	+1292	628.685	87.8	.308	628.377	52-4 ⅛
L2-U3	+670	+112	+782	do	60.9	.249	628.954	52-4 ⅛
U3-L4	+225	+38	+263	do	37.0	.149	628.532	52-4 ⅛
L4-U5	+220	+37	+257	do	37.0	.145	628.540	52-4 ⅛
U5-L6	+663	-110	-773	do	60.9	.244	628.951	52-4 ⅛
L6-U7	+1098	+185	+1283	628.685	87.8	.304	628.379	52-4 ⅛
U7-L8	+1578	+271	+1849	650.777	103.3	.338	651.115	54-3 ½
U1-L1	- 67	- 24	- 91	456.750	35.5	.039	456.789	38-0 ⅝
U2-L2	+175	+ 92	+267	do	35.5	.114	456.636	38-0 ⅝
U3-L3	+172	+ 94	+266	do	35.5	.063	456.813	38-0 ⅝
U4-L4	+191	+ 92	+283	do	35.5	.122	456.628	38-0 ⅝
U5-L5	-131	- 24	-155	do	35.5	.067	456.817	38-0 ⅝
U6-L6	+191	+ 92	+283	do	35.5	.122	456.628	38-0 ⅝
U7-L7	- 122	- 24	- 146	do	35.5	.063	456.813	38-0 ⅝
U8-L8	- 67	- 24	- 91	456.750	35.5	.039	456.789	38-0 ⅝

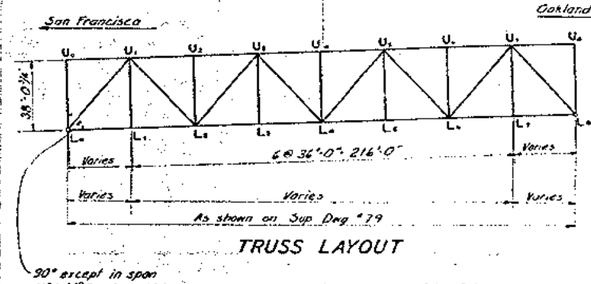
SPAN YB3-YB4

Member	Stresses Dead	Stresses ½ Live	Stresses Total	Geometric Length ins	Gross Area	A/AE ins	Cambered Length ins.	Cambered Length ft and ins.
L0-L1	+1120	+194	+1314	443.500	90.8	.224	443.276	36-11 ⅞
L1-L2	+1120	+194	+1314	432.000	90.8	.208	431.792	35-11 ⅝
L2-L3	+2340	+400	+2740	do	141.8	.270	431.722	35-11 ⅝
L3-L4	+2340	+400	+2740	do	141.8	.270	431.722	35-11 ⅝
L4-L5	+2350	+401	+2751	do	141.8	.280	431.720	35-11 ⅝
L5-L6	+2350	+401	+2751	do	141.8	.280	431.720	35-11 ⅝
L6-L7	+1140	+197	+1337	472.500	90.8	.231	472.269	39-4 ⅜
L7-L8	+1140	+197	+1337	472.500	90.8	.231	472.269	39-4 ⅜
U0-U1	-	-	-	443.500	42.2	-	443.500	36-11 ⅞
U1-U2	-1860	-323	-2203	432.000	114.4	.272	432.272	36-0 ⅜
U2-U3	-1860	-323	-2203	do	114.4	.272	432.272	36-0 ⅜
U3-U4	-2500	-427	-2927	do	154.3	.274	432.274	36-0 ⅜
U4-U5	-2500	-427	-2927	do	154.3	.274	432.274	36-0 ⅜
U5-U6	-1890	-325	-2214	do	114.4	.273	432.273	36-0 ⅜
U6-U7	-1890	-326	-2214	432.000	114.4	.273	432.273	36-0 ⅜
U7-U8	-	-	-	472.500	42.2	-	472.500	39-4 ½
L0-U1	-1560	-273	-1833	630.732	103.3	.389	651.121	54-3 ⅛
U1-L2	+1160	+188	+1268	628.685	87.8	.304	628.379	52-4 ⅛
L2-U3	- 670	- 112	- 782	do	60.9	.249	628.954	52-4 ⅛
U3-L4	+ 230	+ 38	+ 268	do	37.0	.151	628.534	52-4 ⅛
L4-U5	+ 220	+ 36	+ 256	do	37.0	.145	628.540	52-4 ⅛
U5-L6	- 660	- 111	- 771	do	60.9	.244	628.951	52-4 ⅛
L6-U7	+1100	+185	+1285	628.685	87.8	.304	628.379	52-4 ⅛
U7-L8	-1590	-275	-1865	653.173	103.3	.395	653.568	54-5 ⅛
U1-L1	- 66	- 24	- 90	456.750	35.5	.039	456.789	38-0 ⅝
U2-L2	+ 175	+ 90	+ 265	do	35.5	.114	456.636	38-0 ⅝
U3-L3	- 122	- 24	- 146	do	35.5	.063	456.813	38-0 ⅝
U4-L4	+ 191	+ 94	+ 285	do	35.5	.122	456.628	38-0 ⅝
U5-L5	- 131	- 24	- 155	do	35.5	.067	456.817	38-0 ⅝
U6-L6	+ 191	+ 94	+ 285	do	35.5	.122	456.628	38-0 ⅝
U7-L7	- 122	- 24	- 146	do	35.5	.063	456.813	38-0 ⅝
U8-L8	- 66	- 24	- 90	456.750	35.5	.039	456.789	38-0 ⅝

SPAN YB4-E1

Member	Stresses Dead	Stresses ½ Live	Stresses Total	Geometric Length ins.	Gross Area	A/AE ins.	Cambered Length ins.	Cambered Length ft and ins
L0-L1	+1140	+197	+1337	472.469	90.8	.232	472.237	39-4 ¼
L1-L2	+1140	+197	+1337	432.000	90.8	.212	431.788	35-11 ½
L2-L3	+2340	+401	+2741	do	141.8	.274	431.722	35-11 ⅝
L3-L4	+2340	+401	+2741	do	141.8	.274	431.722	35-11 ⅝
L4-L5	+2335	+400	+2735	do	141.8	.274	431.724	35-11 ⅝
L5-L6	+2335	+400	+2735	do	141.8	.274	431.724	35-11 ⅝
L6-L7	+1110	+190	+1300	432.000	90.8	.204	431.796	35-11 ⅝
L7-L8	+1110	+190	+1300	452.668	90.8	.214	452.472	37-8 ⅜
U0-U1	-	-	-	472.469	42.2	-	472.469	39-4 ⅛
U1-U2	-1890	-326	-2216	432.000	114.4	.272	432.272	36-0 ⅜
U2-U3	-1890	-326	-2216	do	114.4	.272	432.272	36-0 ⅜
U3-U4	-2485	-427	-2912	do	154.3	.271	432.271	36-0 ⅜
U4-U5	-2485	-427	-2912	do	154.3	.271	432.271	36-0 ⅜
U5-U6	-1870	-323	-2193	do	114.4	.270	432.270	36-0 ⅜
U6-U7	-1870	-323	-2193	432.000	114.4	.270	432.270	36-0 ⅜
U7-U8	-	-	-	452.668	42.2	-	452.668	37-8 ¼
L0-U1	+1583	+274	+1857	657.151	103.3	.393	657.544	54-9 ⅛
U1-L2	+1092	+185	+1277	628.685	87.8	.304	628.381	52-4 ⅛
L2-U3	+ 660	- 111	- 771	do	60.9	.244	628.951	52-4 ⅛
U3-L4	+ 214	+ 36	+ 250	do	37.0	.141	628.544	52-4 ⅛
L4-U5	+ 220	+ 36	+ 256	do	37.0	.145	628.540	52-4 ⅛
U5-L6	- 675	- 112	- 787	do	60.9	.271	628.956	52-4 ⅛
L6-U7	+1110	+186	+1298	628.685	87.8	.310	628.375	52-4 ⅛
U7-L8	-1568	-270	-1838	649.074	103.3	.367	649.443	54-3 ⅛
U1-L1	- 66	- 24	- 90	456.750	35.5	.039	456.789	38-0 ⅝
U2-L2	+ 175	+ 90	+ 265	do	35.5	.114	456.636	38-0 ⅝
U3-L3	- 122	- 24	- 146	do	35.5	.063	456.813	38-0 ⅝
U4-L4	+ 191	+ 94	+ 285	do	35.5	.122	456.628	38-0 ⅝
U5-L5	- 131	- 24	- 155	do	35.5	.067	456.817	38-0 ⅝
U6-L6	+ 191	+ 94	+ 285	do	35.5	.122	456.628	38-0 ⅝
U7-L7	- 122	- 24	- 146	do	35.5	.063	456.813	38-0 ⅝
U8-L8	- 66	- 24	- 90	456.750	35.5	.039	456.789	38-0 ⅝

End panels adjusted so that panel point L4 is vertically above its position as shown on Sup Dwg. "79



TRUSS LAYOUT

90° except in span YB1-YB2 where U6L6 is vertical

Note: In span YB3-YB4 vertical curve to be taken up in floor system

NOTES

Live Load: ½ Live = 2000 lb per ft. along North Truss and 1500 lb per ft. along North Truss, except for verticals where the Live Load is ½ the floor beam reaction

E: Value of E taken as 30,000,000 #/in² for all members

\+ = Tension

− = Compression

Cambered Length - The cambered length as given in feet and inches to be used for fabrication

SOUTH TRUSSES

SPAN YB1-YB2

Member	Stresses Dead	Stresses ½ Live	Stresses Total	Geometric Length ins	Gross Area	A/AE ins	Cambered Length ins.	Cambered Length ft and ins.
L0-L1	+ 675	+170	+ 845	321.125	63.9	.141	320.984	26-9
L1-L2	+ 675	+170	+ 845	432.000	63.9	.190	431.810	35-11 ⅝
L2-L3	+1750	+442	+2192	do	124.4	.242	431.758	35-11 ¾
L3-L4	+1750	+442	+2192	do	124.4	.242	431.758	35-11 ¾
L4-L5	+1750	+442	+2192	do	124.4	.242	431.758	35-11 ¾
L5-L6	+1750	+442	+2192	do	124.4	.242	431.758	35-11 ¾
L6-L7	+ 675	+170	+ 845	432.000	63.9	.190	431.810	35-11 ⅝
L7-L8	+ 675	+170	+ 845	321.125	63.9	.141	320.984	26-9
U0-U1	-	-	-	312.938	42.2	-	312.938	24-0 ¹⁵/₁₆
U1-U2	-1350	-340	-1690	432.000	97.5	.259	432.259	36-0 ⅛
U2-U3	-1350	-340	-1690	do	97.5	.259	432.259	36-0 ⅛
U3-U4	-1885	-476	-2361	do	128.5	.264	432.264	36-0 ⅛
U4-U5	-1885	-476	-2361	do	128.5	.264	432.264	36-0 ⅛
U5-U6	-1350	-340	-1690	do	97.5	.259	432.259	36-0 ⅛
U6-U7	-1350	-340	-1690	432.000	97.5	.259	432.259	36-0 ⅛
U7-U8	-	-	-	321.125	63.2	-	321.125	21-9 ⅛
L0-U1	-1160	- 296	-1476	558.338	93.9	.292	558.630	46-6 ⅜
U1-L2	+ 980	- 248	+1228	628.685	87.8	.293	628.392	52-4 ⅜
L2-U3	+ 590	- 148	- 738	do	60.9	.254	628.939	52-4 ⅛
U3-L4	+ 200	- 50	+ 250	do	37.0	.141	628.546	52-4 ⅛
L4-U5	+ 200	- 50	+ 250	do	37.0	.141	628.546	52-4 ⅛
U5-L6	+ 590	- 148	- 738	do	60.9	.254	628.939	52-4 ⅛
L6-U7	+ 980	+ 248	+1228	628.685	87.8	.293	628.392	52-4 ⅜
U7-L8	+1160	+ 296	+1456	558.338	93.9	.292	558.630	46-6 ⅜
U1-L1	- 56	- 24	- 80	456.873	35.5	.034	456.857	38-0 ⅛
U2-L2	+ 119	+ 98	+ 217	456.750	35.5	.093	456.657	38-0 ⅛
U3-L3	- 116	- 24	- 140	do	35.5	.062	456.810	38-0 ⅛
U4-L4	+ 134	+ 98	+ 232	do	35.5	.100	456.650	38-0 ⅛
U5-L5	- 122	- 24	- 146	do	35.5	.063	456.813	38-0 ⅛
U6-L6	+ 134	+ 98	+ 232	do	35.5	.100	456.650	38-0 ⅛
U7-L7	- 116	- 24	- 140	do	35.5	.061	456.810	38-0 ⅛
U8-L8	+ 119	+ 98	+ 217	do	35.5	.093	456.657	38-0 ⅛
U1-L1	- 56	- 24	- 80	456.750	35.5	.034	456.788	38-0 ⅛

SPAN YB2-YB3

Member	Stresses Dead	Stresses ½ Live	Stresses Total	Geometric Length ins.	Gross Area	A/AE ins.	Cambered Length ins.	Cambered Length ft and ins.
L0-L1	+ 646	+ 217	+1063	401.269	33-5 ⅝	.169	401.269	33-5 ⅝
L1-L2	+ 646	+ 217	+1063	432.000	64.8	.182	431.818	35-11 ⅝
L2-L3	+1875	+486	+2361	do	135.8	.250	431.750	35-11 ¼
L3-L4	+1875	+486	+2361	do	135.8	.250	431.750	35-11 ¼
L4-L5	+1860	+483	+2343	do	135.8	.248	431.752	35-11 ¼
L5-L6	+1860	+483	+2343	do	135.8	.248	431.752	35-11 ¼
L6-L7	+ 810	+ 207	+1017	432.000	64.8	.172	431.828	35-11 ¾
L7-L8	+ 810	+ 207	+1017	379.312	64.8	.151	379.161	31-7 ⅜
U0-U1	-	-	-	401.438	42.2	-	401.438	33-5 ⅜
U1-U2	-1490	-384	-1874	433.000	104.9	.253	431.253	36-0 ¼
U2-U3	-1490	-384	-1874	do	104.9	.253	431.253	36-0 ¼
U3-U4	-2000	-519	-2519	do	143.5	.253	432.253	36-0 ¼
U4-U5	-2000	-519	-2519	do	143.5	.253	432.253	36-0 ¼
U5-U6	-1490	-379	-1869	do	104.9	.249	432.249	36-0 ¼
U6-U7	-1490	-379	-1869	433.000	104.9	.249	432.249	36-0 ¼
U7-U8	-	-	-	379.312	42.2	-	379.312	31-7 ⅜
L0-U1	-1290	-330	-1620	608.690	93.9	.349	608.439	50-8 ¼
U1-L2	+ 960	+ 244	+1184	628.685	87.8	.282	628.403	52-4 ⅛
L2-U3	+ 360	- 146	- 706	do	60.9	.243	628.936	52-4 ⅛
U3-L4	+ 180	+ 47	+ 227	do	37.0	.128	628.557	52-4 ⅛
L4-U5	+ 200	+ 52	+ 252	do	37.0	.142	628.543	52-4 ⅛
U5-L6	- 575	- 151	- 726	do	60.9	.250	628.935	52-4 ⅛
L6-U7	+ 960	+ 250	+1210	628.685	87.8	.288	628.397	52-4 ⅛
U7-L8	-1270	- 324	-1594	593.716	93.9	.336	594.052	49-6 ¼
U1-L1	- 74	- 24	- 98	456.750	35.5	.042	456.792	38-0 ⅛
U2-L2	+ 152	+100	+ 252	do	35.5	.108	456.642	38-0 ⅛
U3-L3	- 124	- 24	- 148	do	35.5	.063	456.813	38-0 ⅛
U4-L4	+ 153	+ 96	+ 249	do	35.5	.107	456.643	38-0 ⅛
U5-L5	- 127	- 24	- 151	do	35.5	.065	456.815	38-0 ⅛
U6-L6	+ 153	+ 96	+ 249	do	35.5	.107	456.643	38-0 ⅛
U7-L7	- 124	- 24	- 148	do	35.5	.063	456.813	38-0 ⅛
U8-L8	+ 119	+ 98	+ 217	do	35.5	.093	456.657	38-0 ⅛
U1-L1	- 56	- 24	- 80	456.750	35.5	.034	456.788	38-0 ⅛

SPAN YB3-YB4

Member	Stresses Dead	Stresses ½ Live	Stresses Total	Geometric Length ins	Gross Area	A/AE ins.	Cambered Length ins.	Cambered Length ft and ins.
L0-L1	+ 800	+ 204	+1004	379.250	64.8	.160	379.090	31-7 ⅛
L1-L2	+ 800	+ 204	+1004	432.000	64.8	.171	431.829	35-11 ⅝
L2-L3	+1850	+480	+2330	do	135.8	.247	431.753	35-11 ⅝
L3-L4	+1850	+480	+2330	do	135.8	.247	431.753	35-11 ⅝
L4-L5	+1860	+482	+2342	do	135.8	.248	431.752	35-11 ⅝
L5-L6	+1860	+482	+2342	do	135.8	.248	431.752	35-11 ⅝
L6-L7	+ 820	+ 210	+1030	432.000	64.8	.174	431.826	35-11 ⅝
L7-L8	+ 820	+ 210	+1030	388.250	64.8	.157	388.093	32-4 ⅜
U0-U1	-	-	-	379.250	42.2	-	379.250	31-7 ⅛
U1-U2	-1460	- 377	-1837	432.000	104.9	.253	431.253	36-0 ¼
U2-U3	-1460	- 377	-1837	do	104.9	.247	432.247	36-0 ¼
U3-U4	-1980	- 515	-2495	do	143.5	.251	432.250	36-0 ¼
U4-U5	-1980	- 515	-2495	do	143.5	.250	432.250	36-0 ¼
U5-U6	-1470	- 380	-1850	do	104.9	.250	432.250	36-0 ¼
U6-U7	-1470	- 380	-1850	432.000	104.9	.250	432.250	36-0 ¼
U7-U8	-	-	-	368.250	42.2	-	368.250	32-4 ¼
L0-U1	-1260	- 323	-1583	593.676	93.9	.333	594.009	49-6
U1-L2	+ 950	+ 249	+1199	628.685	87.8	.286	628.399	52-4 ⅛
L2-U3	- 570	- 150	- 720	do	60.9	.248	628.933	52-4 ⅛
U3-L4	+ 190	+ 51	+ 241	do	37.0	.136	628.549	52-4 ⅛
L4-U5	+ 185	+ 53	+ 238	do	37.0	.134	628.551	52-4 ⅛
U5-L6	- 560	- 147	- 707	do	60.9	.244	628.929	52-4 ⅛
L6-U7	+ 950	+ 246	+1196	628.685	87.8	.285	628.400	52-4 ⅛
U7-L8	-1280	- 325	-1605	599.465	93.9	.341	599.806	49-11 ⅛
U1-L1	- 74	- 24	- 98	456.750	35.5	.042	456.792	38-0 ⅛
U2-L2	+ 152	+100	+ 252	do	35.5	.108	456.642	38-0 ⅛
U3-L3	- 124	- 24	- 148	do	35.5	.063	456.813	38-0 ⅛
U4-L4	+ 153	+ 96	+ 249	do	35.5	.107	456.643	38-0 ⅛
U5-L5	- 127	- 24	- 151	do	35.5	.065	456.815	38-0 ⅛
U6-L6	+ 153	+ 96	+ 249	do	35.5	.107	456.643	38-0 ⅛
U7-L7	- 124	- 24	- 148	do	35.5	.063	456.813	38-0 ⅛
U8-L8	+ 119	+ 98	+ 217	do	35.5	.093	456.657	38-0 ⅛
U1-L1	- 74	- 24	- 98	456.750	35.5	.042	456.792	38-0 ⅛

SPAN YB4-E1

Member	Stresses Dead	Stresses ½ Live	Stresses Total	Geometric Length ins.	Gross Area	A/AE ins.	Cambered Length ins.	Cambered Length ft and ins.
L0-L1	+ 830	+ 213	+1043	388.183	64.8	.159	388.024	32-4 ¼
L1-L2	+ 830	+ 213	+1043	432.000	64.8	.177	431.823	35-11 ⅝
L2-L3	+1890	+483	+2373	do	135.8	.251	431.749	35-11 ¾
L3-L4	+1890	+483	+2373	do	135.8	.251	431.749	35-11 ¾
L4-L5	+1900	+486	+2386	do	135.8	.252	431.748	35-11 ¾
L5-L6	+1900	+486	+2386	do	135.8	.252	431.748	35-11 ¾
L6-L7	+ 870	+ 225	+1095	432.000	64.8	.184	431.816	35-11 ⅝
L7-L8	+ 870	+ 225	+1095	413.125	64.8	.177	412.948	34-4 ⅞
U0-U1	-	-	-	388.188	42.2	-	388.188	32-4 ⅛
U1-U2	-1490	- 379	-1869	432.000	104.9	.252	432.252	36-0 ⅛
U2-U3	-1490	- 379	-1869	do	104.9	.252	432.252	36-0 ⅛
U3-U4	-2020	- 519	-2539	do	143.5	.254	432.254	36-0 ⅛
U4-U5	-2020	- 519	-2539	do	143.5	.254	432.254	36-0 ⅛
U5-U6	-1520	- 386	-1906	do	104.9	.257	432.257	36-0 ⅛
U6-U7	-1520	- 386	-1906	432.000	104.9	.257	432.257	36-0 ⅛
U7-U8	-	-	-	413.125	62.2	-	413.125	34-5 ⅛
L0-U1	-1285	- 328	-1613	593.426	93.9	.344	593.768	49-11 ⅝
U1-L2	+ 960	+ 250	+1210	628.685	87.8	.288	628.398	52-4 ⅜
L2-U3	- 575	- 151	- 726	do	60.9	.250	628.935	52-4 ⅛
U3-L4	+ 198	+ 52	+ 250	do	37.0	.141	628.544	52-4 ⅛
L4-U5	+ 178	+ 47	+ 225	do	37.0	.127	628.558	52-4 ⅛
U5-L6	- 565	- 146	- 711	do	60.9	.245	628.930	52-4 ⅛
L6-U7	+ 940	+ 244	+1184	628.685	87.8	.282	628.403	52-4 ⅛
U7-L8	-1298	- 335	-1633	613.868	93.9	.356	614.224	51-2 ⅜
U1-L1	- 74	- 24	- 98	456.750	35.5	.042	456.792	38-0 ⅛
U2-L2	+ 152	+100	+ 252	do	35.5	.108	456.642	38-0 ⅛
U3-L3	- 124	- 24	- 148	do	35.5	.064	456.814	38-0 ⅛
U4-L4	+ 153	+ 96	+ 249	do	35.5	.107	456.643	38-0 ⅛
U5-L5	- 127	- 24	- 151	do	35.5	.065	456.815	38-0 ⅛
U6-L6	+ 153	+ 96	+ 249	do	35.5	.107	456.643	38-0 ⅛
U7-L7	- 124	- 24	- 148	do	35.5	.064	456.814	38-0 ⅛
U8-L8	+ 119	+ 98	+ 217	do	35.5	.093	456.657	38-0 ⅛
U1-L1	- 74	- 24	- 98	456.750	35.5	.042	456.792	38-0 ⅛

CORRECT:

Engineer of Design

APPROVED:

Bridge Engineer

Chief Engineer

Board of Public Works

Chairman

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

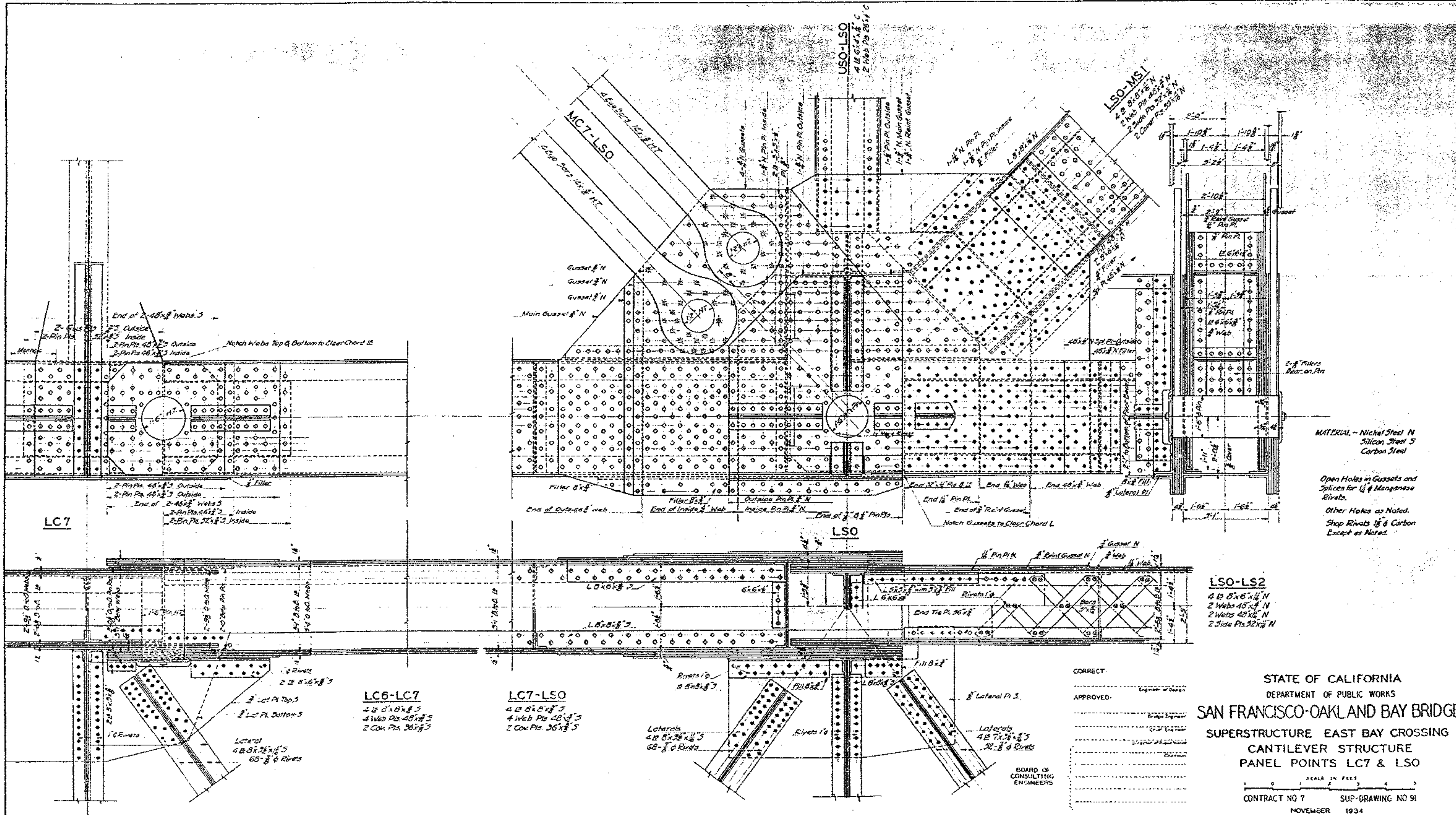
SUPERSTRUCTURE-EAST BAY CROSSING

288 FT. SPANS-YB1 TO E1

CAMBERED LENGTHS

CONTRACT NO. 7 SUP. DRAWING NO. 90

FEBRUARY - 1934



STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE EAST BAY CROSSING

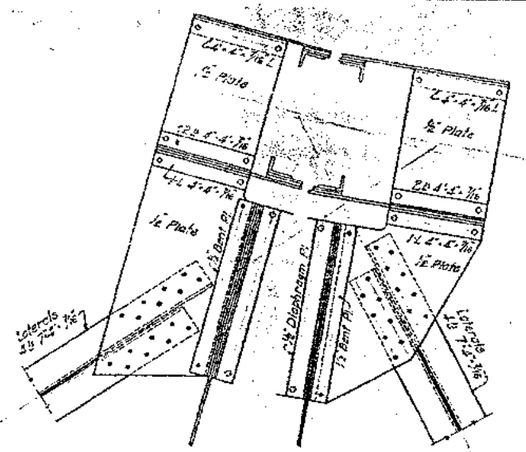
CANTILEVER STRUCTURE

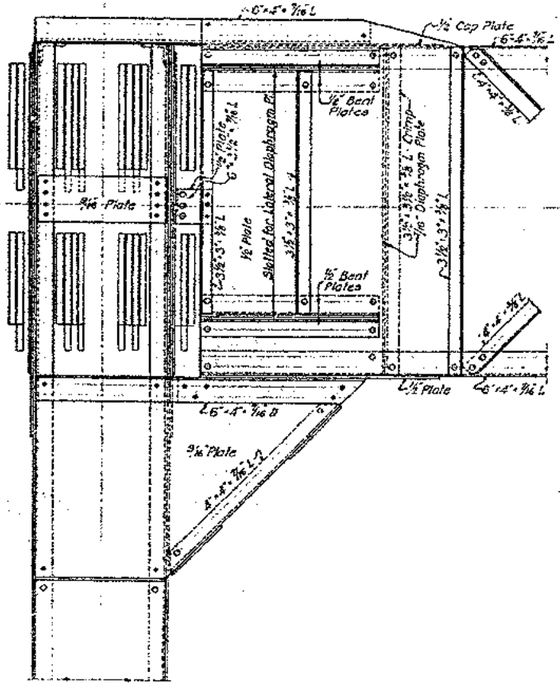
PANEL POINTS LC7 & LSO

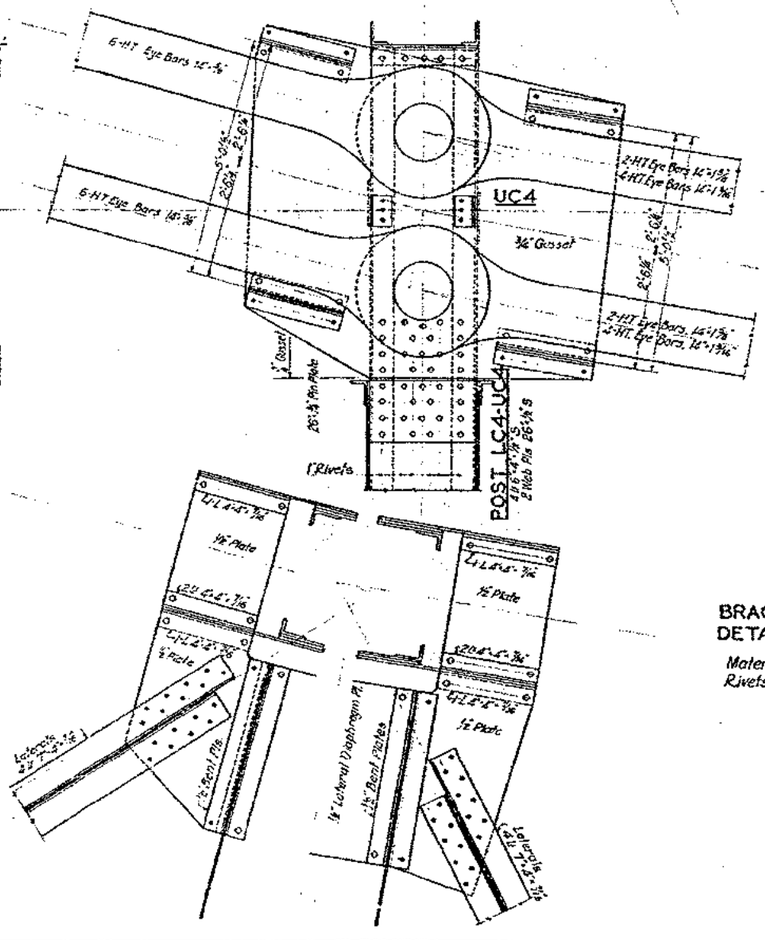
SCALE IN FEET

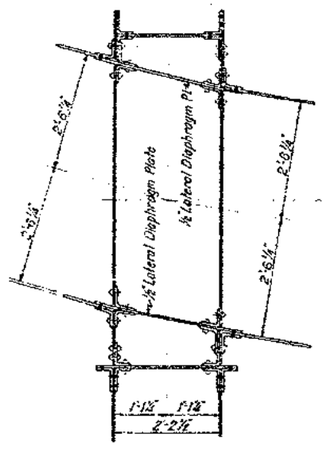
CONTRACT NO 7 SUP-DRAWING NO 91

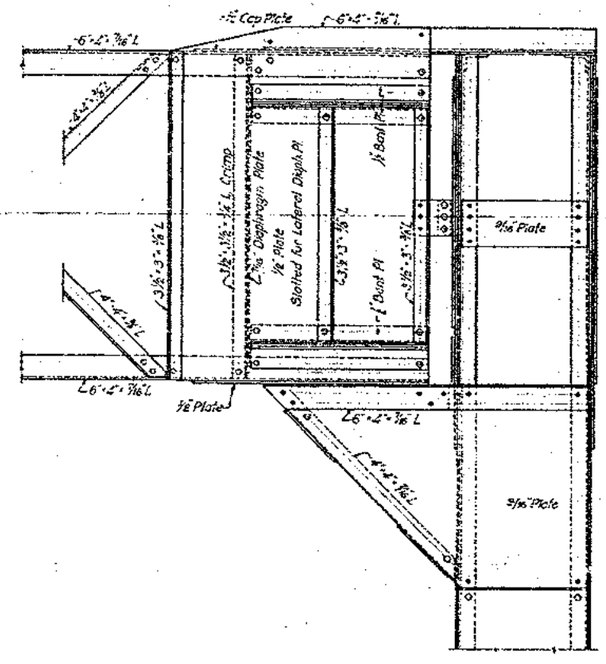
NOVEMBER 1934











BRACING AT UC4 SHOWN
DETAILS AT UA4 SIMILAR

Material: – Carbon Steel, except as noted.
Rivets: – ⅞" ϕ Unless otherwise noted.

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

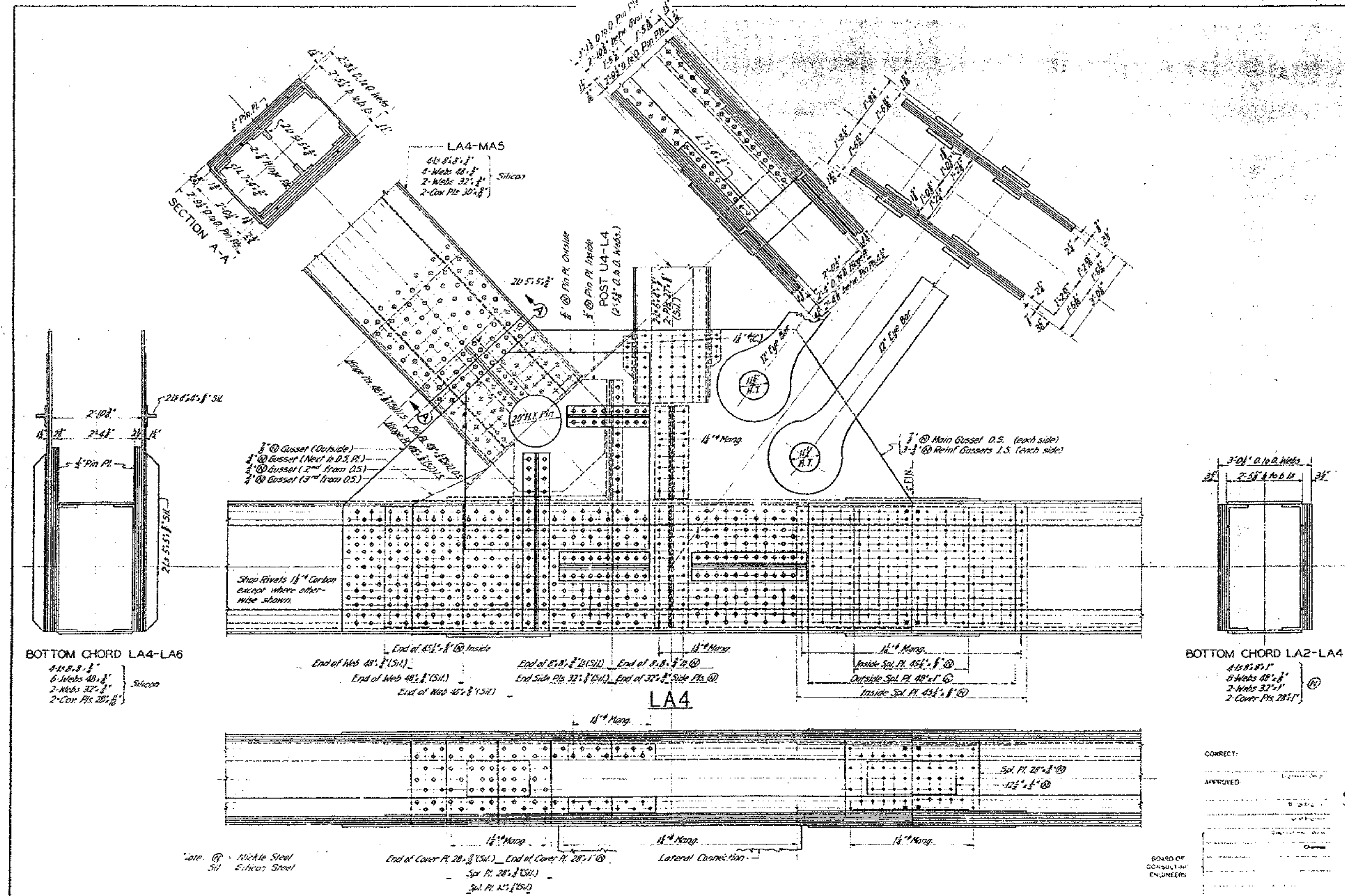
SAN FRANCISCO-OKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING
CANILEVER-TOP LATERALS & STRUTS
UC4 & UA4

SCALE IN FEET

CONTRACT NO 7. SUP DRAWING NO. 92.

DECEMBER – 1934



CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

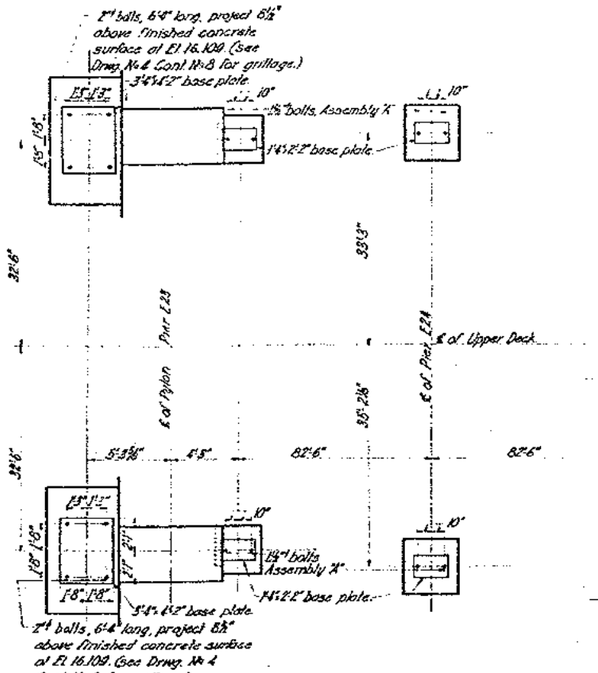
CANTILEVER STRUCTURE

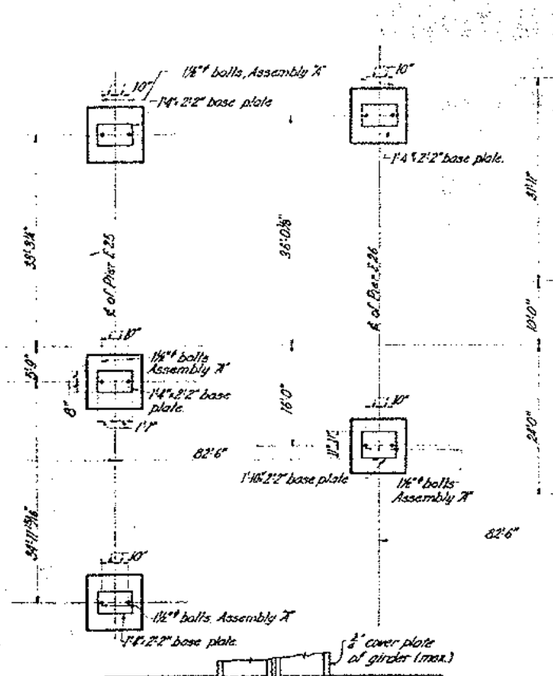
PANEL POINT LA4

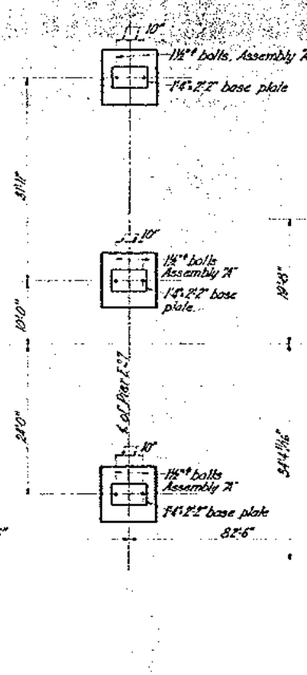
SCALE IN FEET

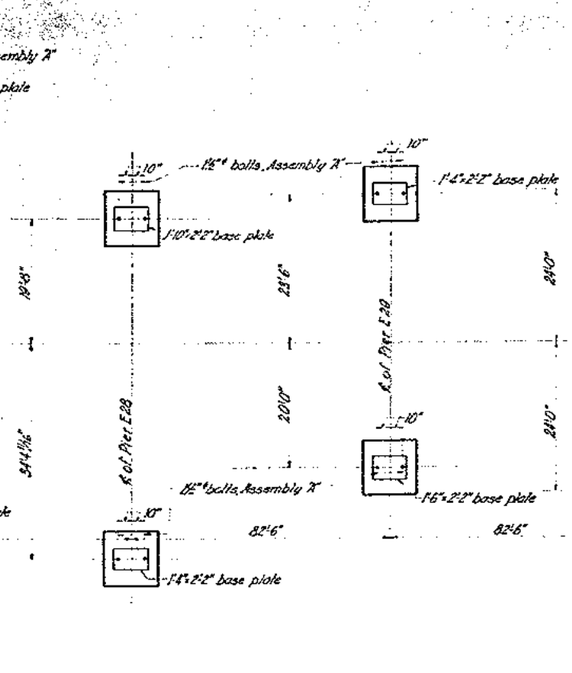
CONTRACT NO 7 SUP DRAWING NO 97

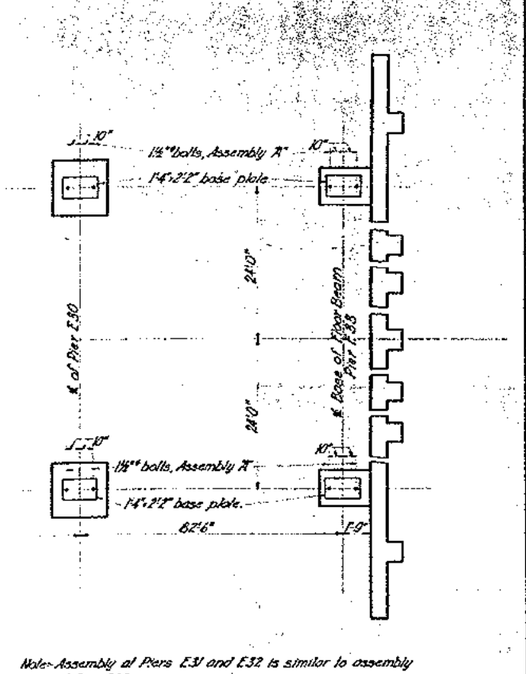
MARCH — 1934



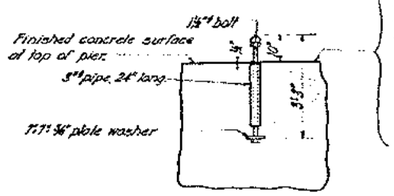








Note- Assembly at Piers E31 and E32 is similar to assembly at Pier E30.



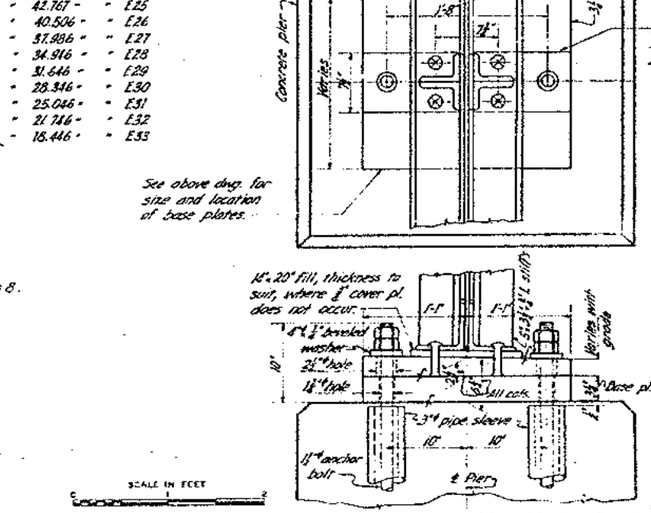
ASSEMBLY A

SCALE IN FEET
0 1 2 3 4

Note- Anchor bolts, pipe sleeves, and plates are part of Contr. No. 8.

Elev. 47.288 for	Pier E23
" 45.027 "	" E24
" 42.767 "	" E25
" 40.506 "	" E26
" 37.986 "	" E27
" 34.916 "	" E28
" 31.646 "	" E29
" 28.346 "	" E30
" 25.046 "	" E31
" 21.746 "	" E32
" 18.446 "	" E33

See above dwg. for size and location of base plates.



SCALE IN FEET
0 1 2

BEARING PLATES FOR CROSS GIRDERS
PIERS E23 TO E33

Date	Revision	By	Chkd.
5-24-34	Anchor Bolts at Pier E23 changed.	J.E.J.	
5-31-34	Bearing Plate Detail Added	J.E.P.	
6-2-34	Dimensions of base plates at E26 & E28 changed	R.F.S.	

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

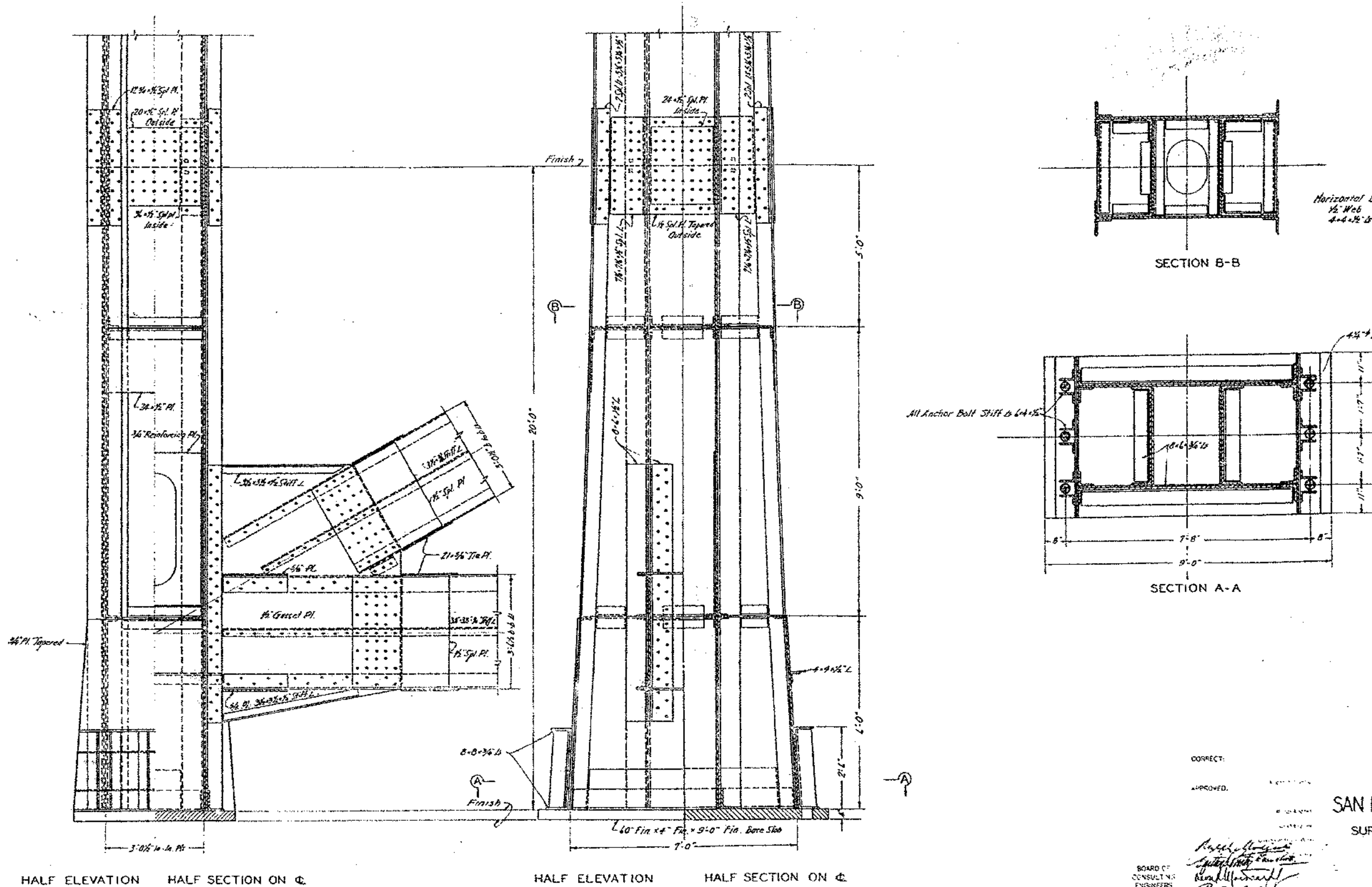
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE
SUBSTRUCTURE - EAST BAY APPROACH
ANCHOR BOLT PLAN AT BEAM SEATS

SCALE IN FEET
1 0 2 4 6 8 10
40 0 10 20 30 40 50
40 0 40 20

CONTRACT NO. 7 SUP. DRAWING NO. 99
CONTRACT NO. 8 SUP. DRAWING NO. 9A

APRIL - 1934



GENERAL NOTES

Material:- Silicon steel, except bracing, horizontal diaphragms and gussets carbon steel.

Rivets: 1"⌀ in main member and bracing connections; ⅞"⌀ in bracing except end connection.

See General Plan Drawing No. 11 for material and column profile ordinates.

All cells to be filled with ladders (not shown on this dwg.)

Horizontal Diaphragm openings 1'-3"×1'-8"

Doorway Opening 1'-4"×3'-6"

Revised: Dec. 11 1933

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

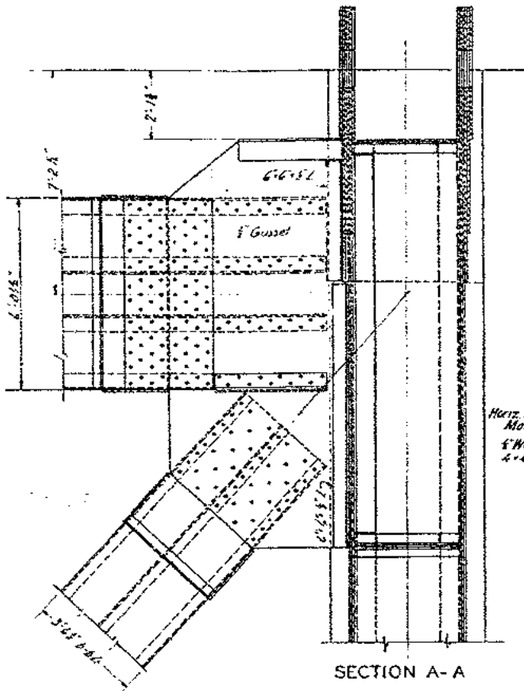
SUPERSTRUCTURE-EAST BAY CROSSING

[redacted]

SCALE IN FEET

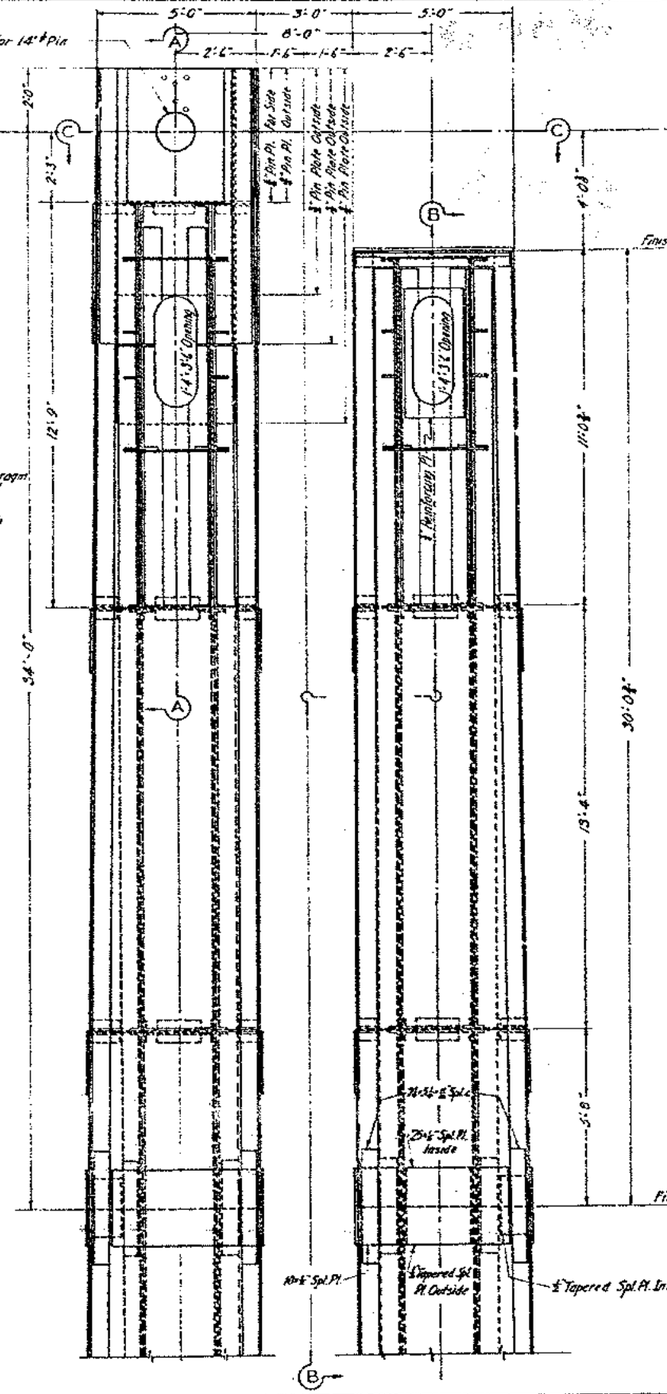
CONTRACT NO 7 SUP. DRAWING NO 67

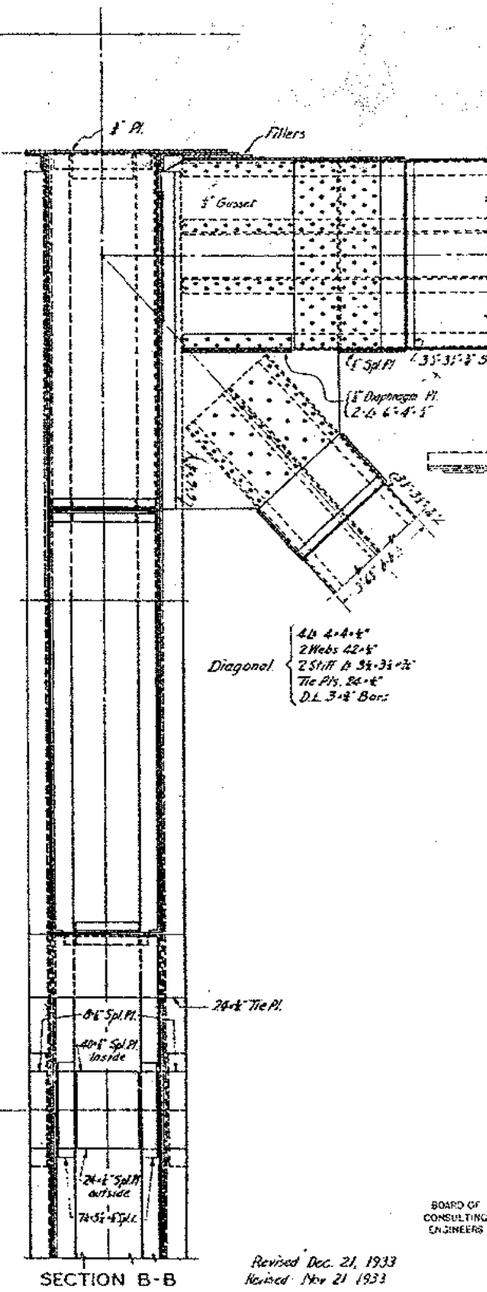
AUGUST - 1933



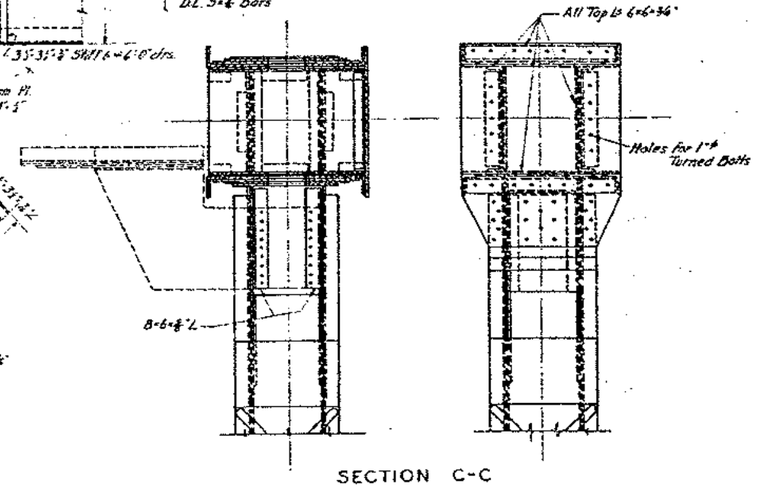
SECTION A-A

Remainder of Column Similar to Section B-B. Strut and Diagonal Material same as Sec. 1 B-B





SECTION B-B



SECTION C-C

GENERAL NOTES

Main Materials - Silicon Steel; Bracing and Details - Carbon Steel
Rivets: 1" ϕ in Main Member and Bracing Connection. 7/8" ϕ in Bracing.

Revised Dec. 21, 1933
Revised Nov 21 1933

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
BENT E4
DETAILS OF CAP

SCALE IN FEET 0 1 2 3 4 5

CONTRACT NO 7 SUP. DRAWING NO. 68

AUGUST - 1933

SECTION D-D

HALF SECTION C-C

HALF TOP VIEW

TRANSVERSE SECTION ELEVATION

LONGITUDINAL SECTION ELEVATION

HALF SECTION B-B

HALF SECTION A-A

MAIN COLUMN MATERIAL

2 Webs 36×¾"
2 Webs 60×⅝"
4 ls 6×6×¾"
4 ls 8×8×⅝"
(See General Plan Dwg #9 for section dimensions)

HORIZONTAL DIAPHRAGM MATERIAL

⅝" Plate
4×4×½" ls

GENERAL NOTES

Rivets: 1"ø in columns and bracing connections except 1⅛"ø in strut connection to shoe at west bent – ⅞"ø in bracing except connections.

Material:- Silicon steel except horizontal diaphragms, bracing members and gussets, cross girders and cap plate, which are carbon steel.

All column cells to be filled with steel feeders (not shown on this drawing)

Horizontal Diaphragm openings 1'-3"×1'-9"

Entrance openings 1'-4"×3'-6"

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE · EAST BAY CROSSING

BENT E9

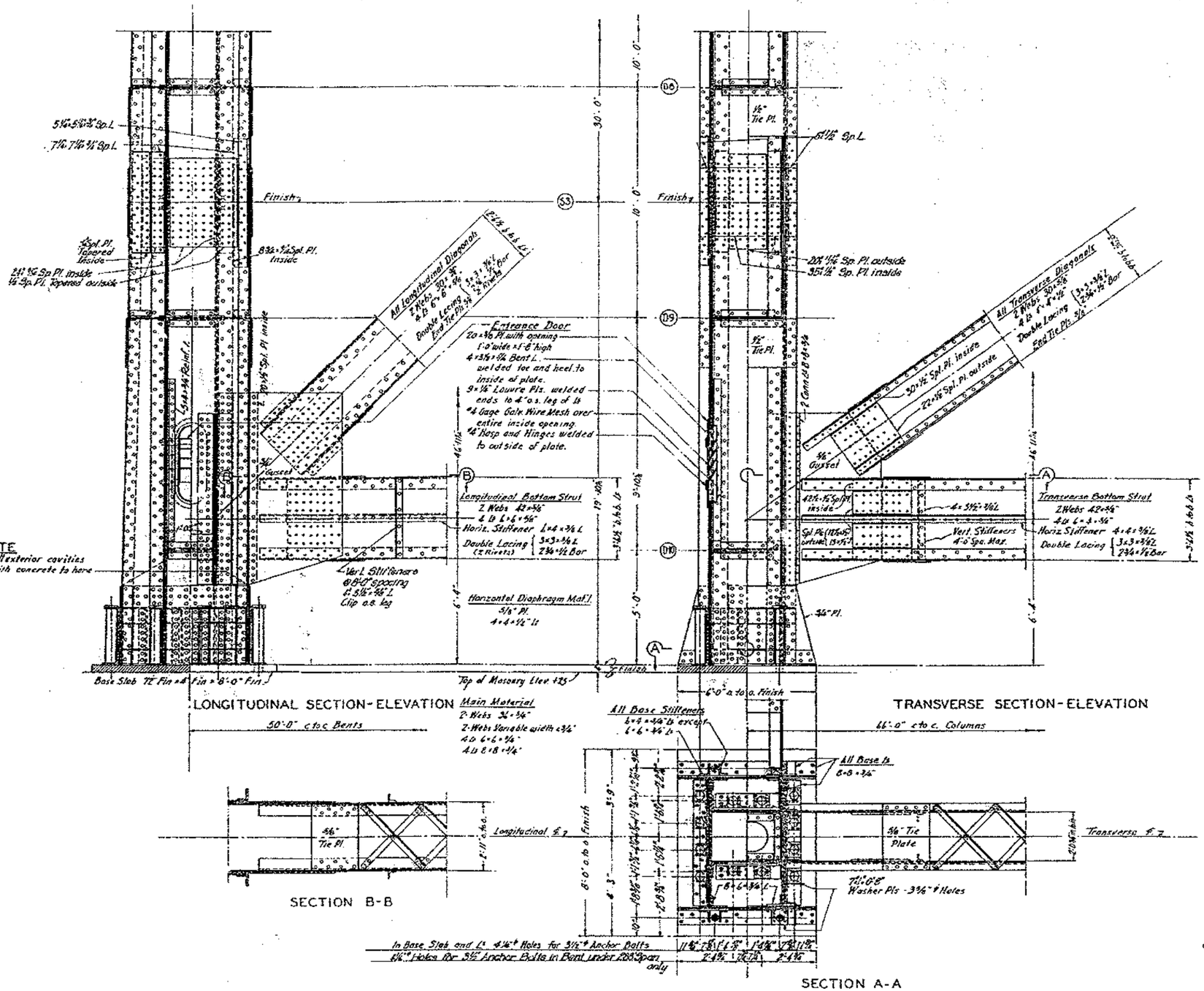
DETAILS OF CAP

SCALE IN FEET

CONTRACT NO 7 SUP. DWG. NO. 69

NOVEMBER 1933

Revised: Dec. 11 1933



GENERAL NOTES

Rivets:- 1" ø in columns and bracing connections
7/8" ø in bracing members except end connections.
Material: Silicon steel except horizontal diaphragm, bracing members and gussets and base slabs, which are carbon steel.
See General Plan Drawing No. 15 for column profile ordinates.
All column cells to be filled with steel ladders (not shown on this drawing)
Horizontal Diaphragm openings 1'-3" x 1'-5"
Entrance opening 1'-4" x 3'-6"

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

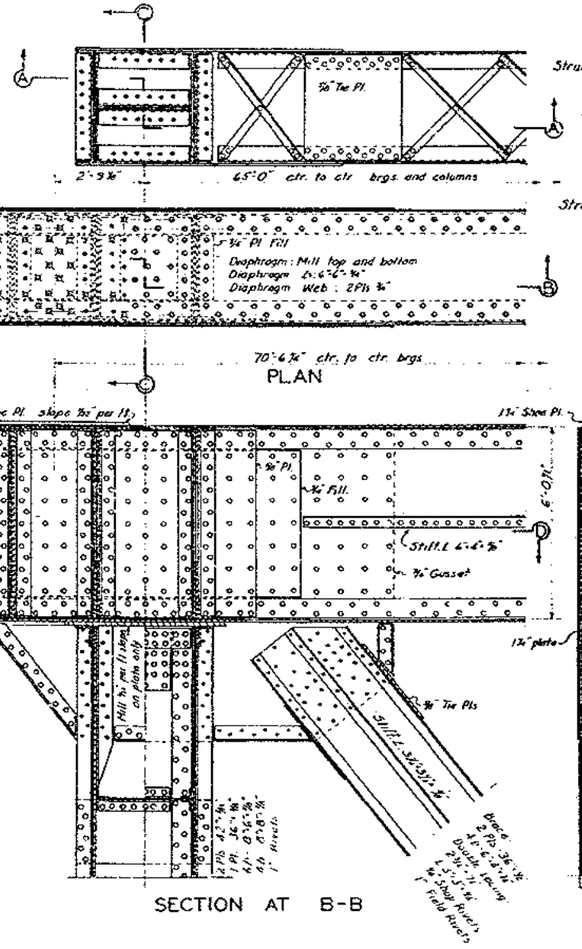
SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

SCALE IN FEET 0 1 2 3 4 5

CONTRACT NO. 7 SUPERSEDING DRAWING NO 70

AUGUST - 1933



NOTES

Main Column material, Silicon Steel

Gussets, struts, and bracing, Carbon Steel.

For General Drawing, see Sup. Dwg. No. 8

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

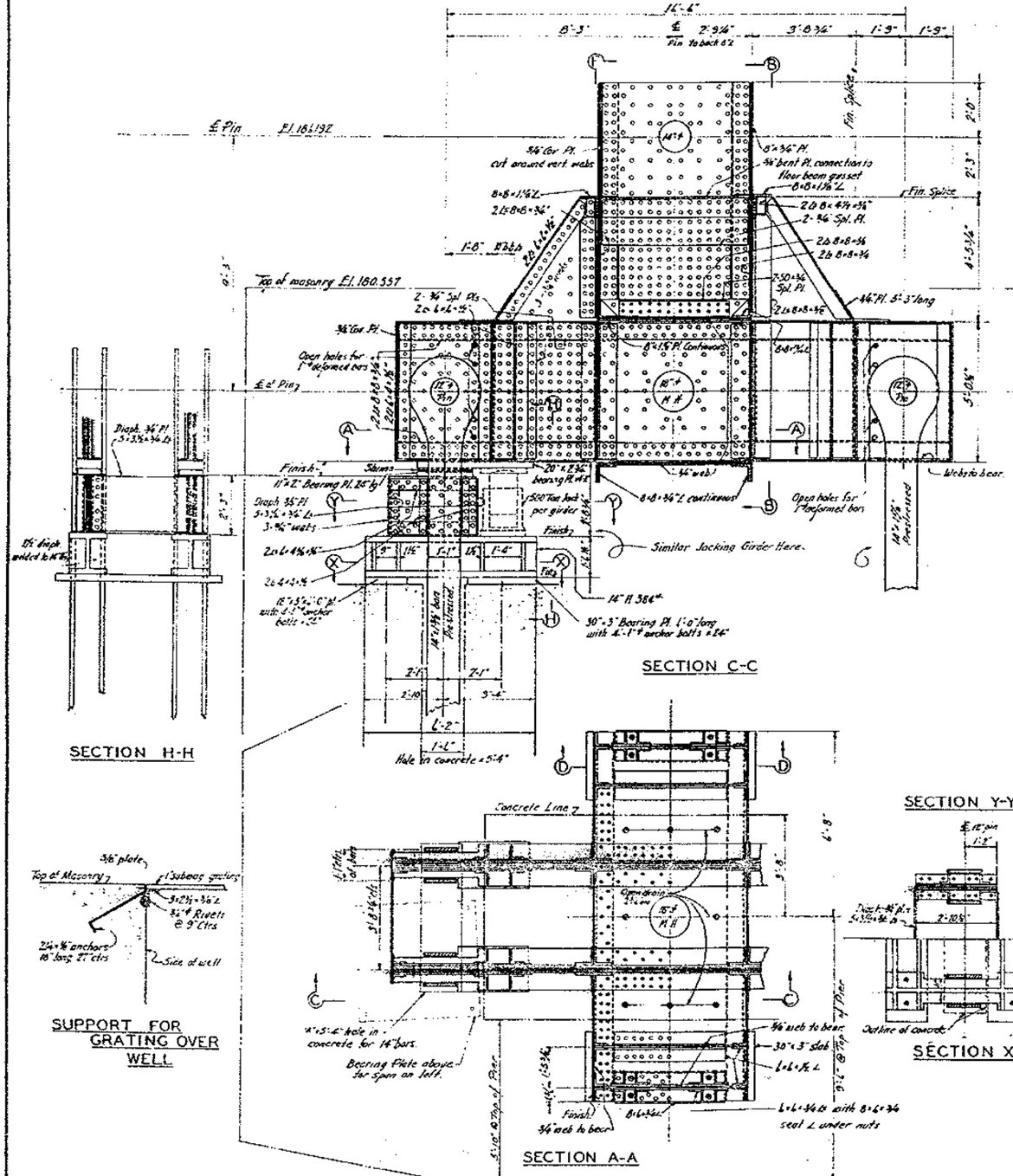
CAP DETAILS FOR BENT E-11

SCALE IN FEET

CONTRACT NO 7 SUPDRAWING NO 71

OCTOBER - 1933

Revised Dec 11 1933



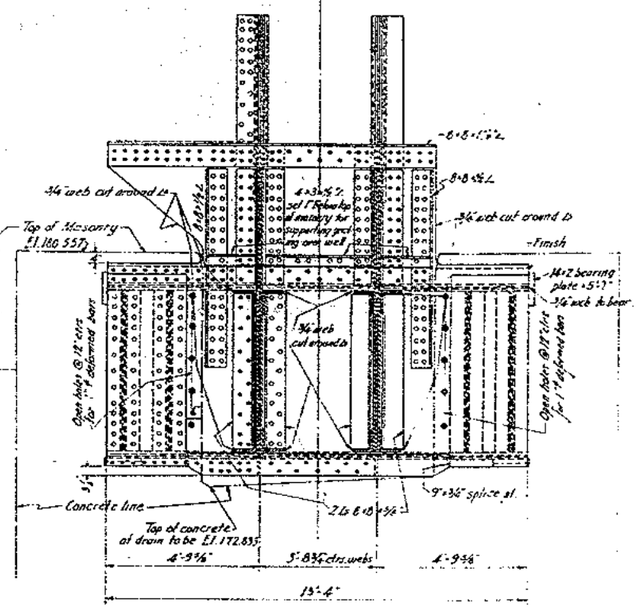
SECTION C-C

SECTION H-H

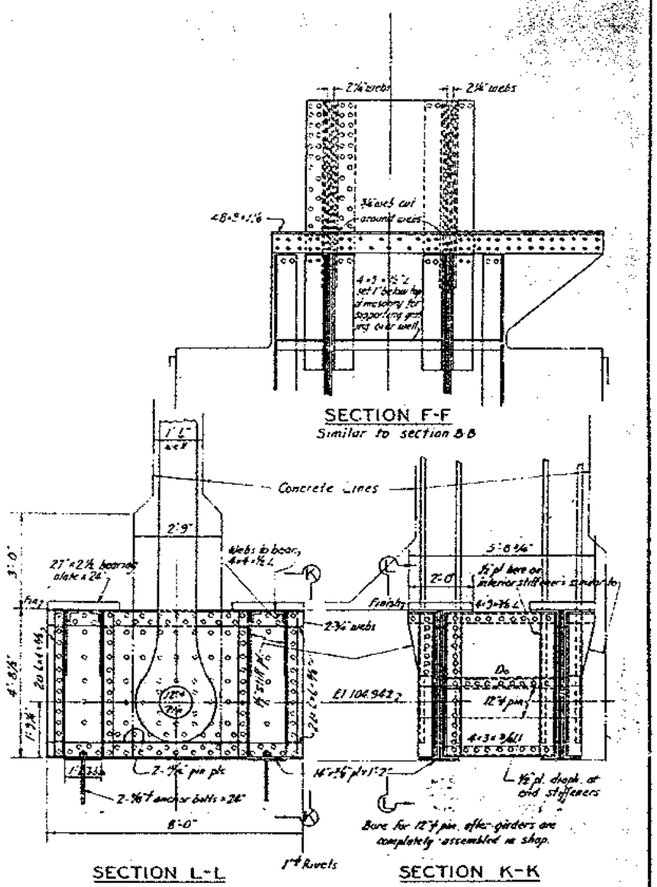
SECTION A-A

SECTION X-X

SUPPORT FOR GRATING OVER WELL



SECTION B-B

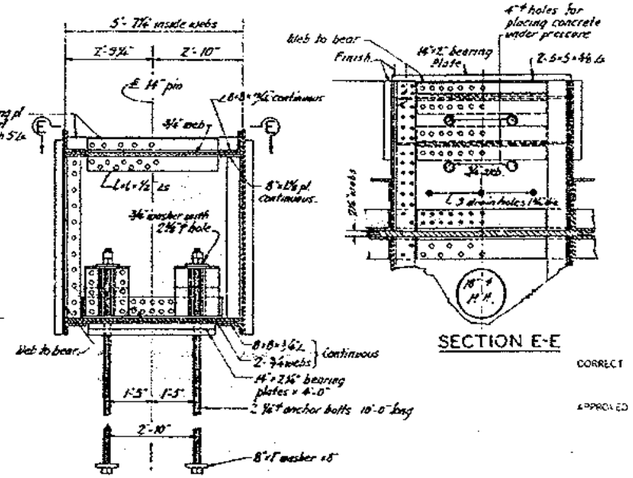


SECTION F-F
Similar to section B-B

SECTION L-L

SECTION K-K

BOTTOM EYE BAR ANCHORAGE



SECTION D-D

SECTION E-E

NOTES:
All main material, except jacking girders, bearing slabs, eye bar anchorage and eye bars, are silicon steel.
All rivets are 1 1/8" except in jacking girders and eye bar anchorage which are 1".

CORRECT

APPROVED

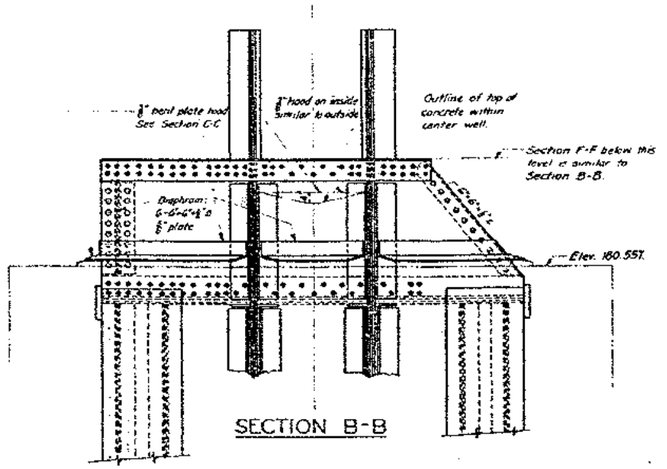
BOARD OF CONSULTING ENGINEERS

DATE	REVISION	BY	CHKD
10/12/33	ELEVATIONS OF CONCRETE		

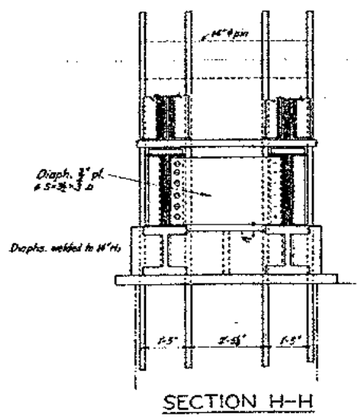
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
PIER E1
ANCHORAGE STEELWORK

SCALE IN FEET 0 1 2 3 4 5

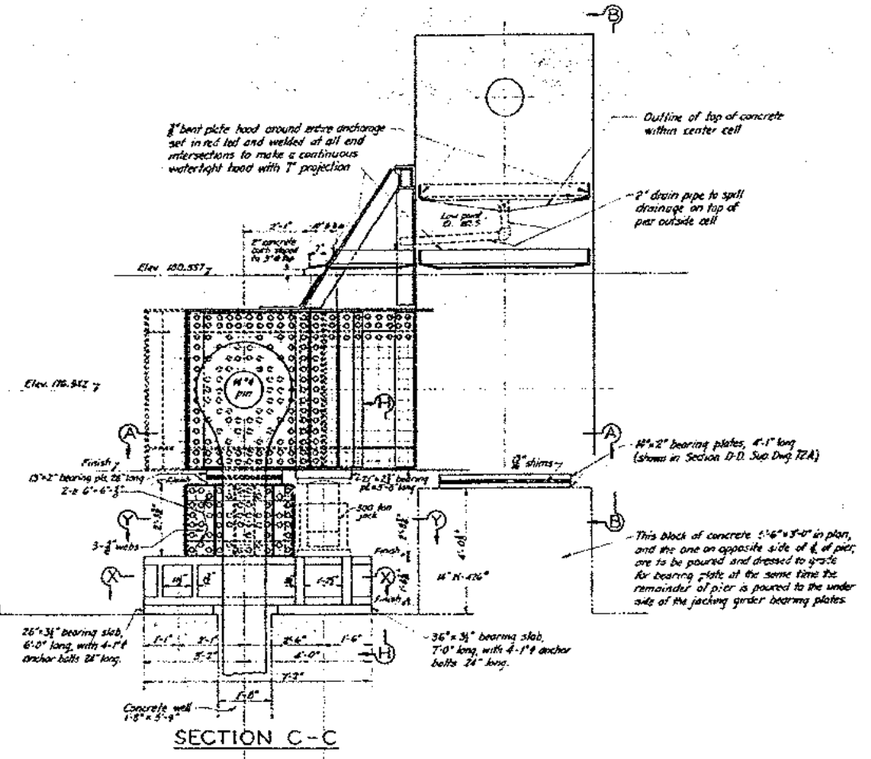
CONTRACT NO. 7 SUP. DRAWING NO 72A
AUGUST — 1933



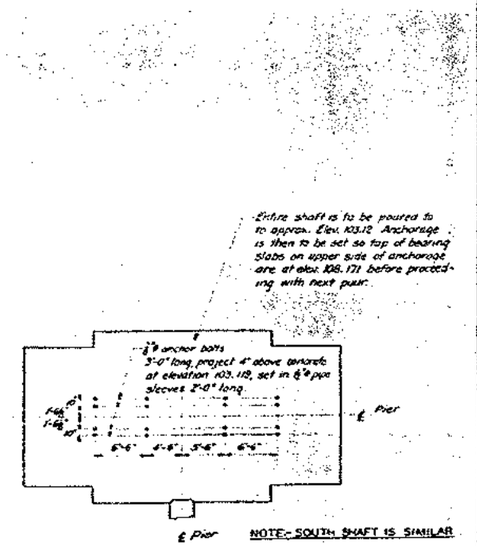
SECTION B-B



SECTION H-H

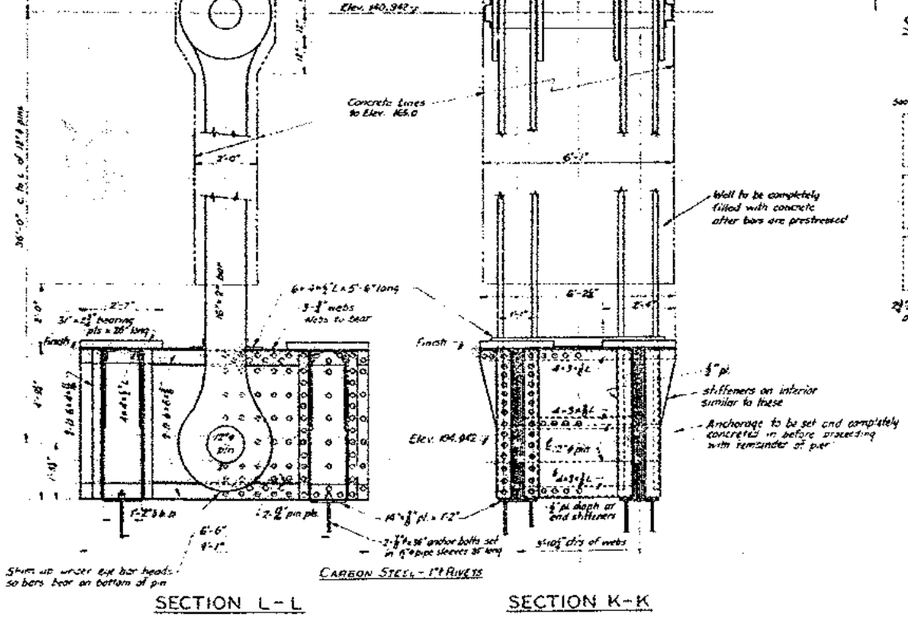


SECTION C-C



SECTION OF NORTH SHAFT AT BOTTOM EYE BAR ANCHORAGE

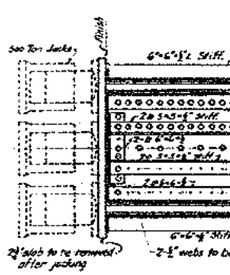
SCALE IN FEET 0 1 2 3 4 5 10



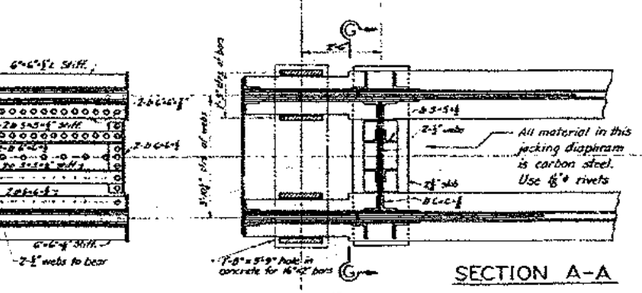
SECTION L-L

SECTION K-K

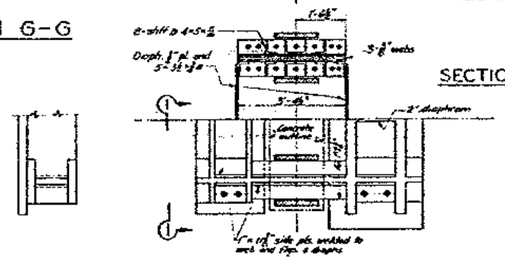
BOTTOM EYE BAR ANCHORAGE



SECTION G-G



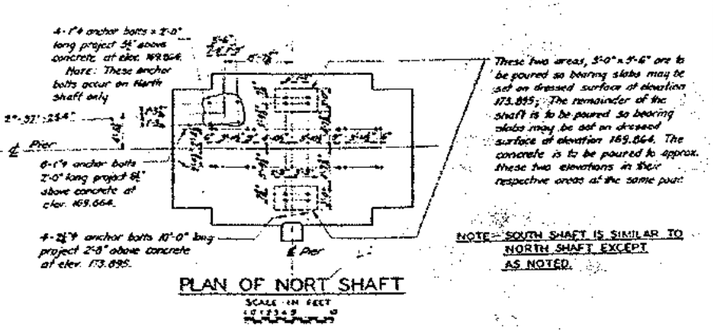
SECTION A-A



SECTION Y-Y

SECTION I-I

SECTION X-X



PLAN OF NORT SHAFT

SCALE IN FEET 0 1 2 3 4 5 10

CORRECT:

APPROVED:

Engineer of Bay Br.

Bridge Engineer

Chief Engineer

Director of Public Works

Governor

BOARD OF CONSULTING ENGINEERS

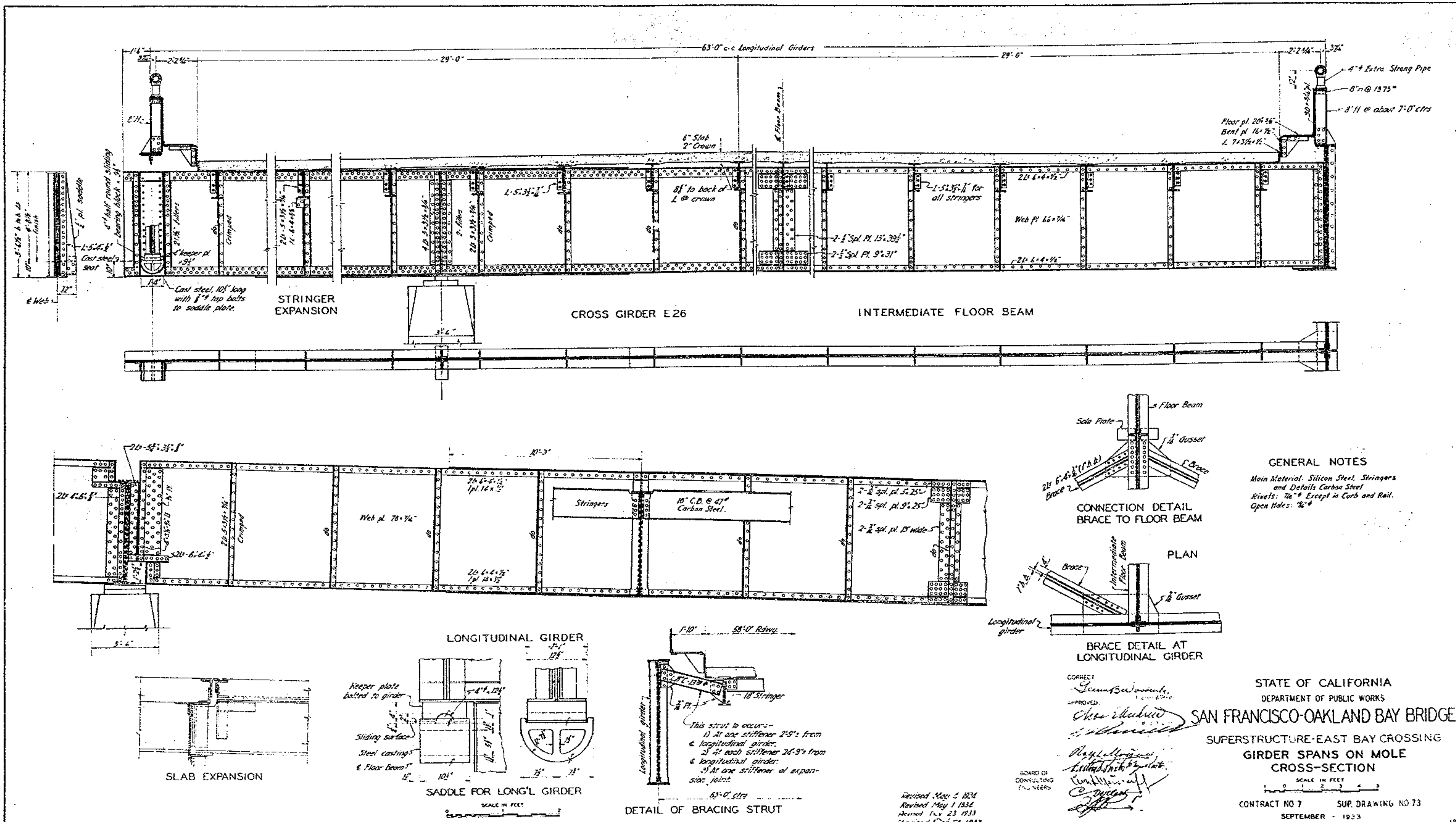
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
ANCHORAGE STEELWORK
PIER E1

SCALE IN FEET 0 1 2 3 4 5

CONTRACT NO. 7. SUP. DRAWING NO. 72B

FEB. - 1934

WORK WITH SHEET NO. 72A



GENERAL NOTES

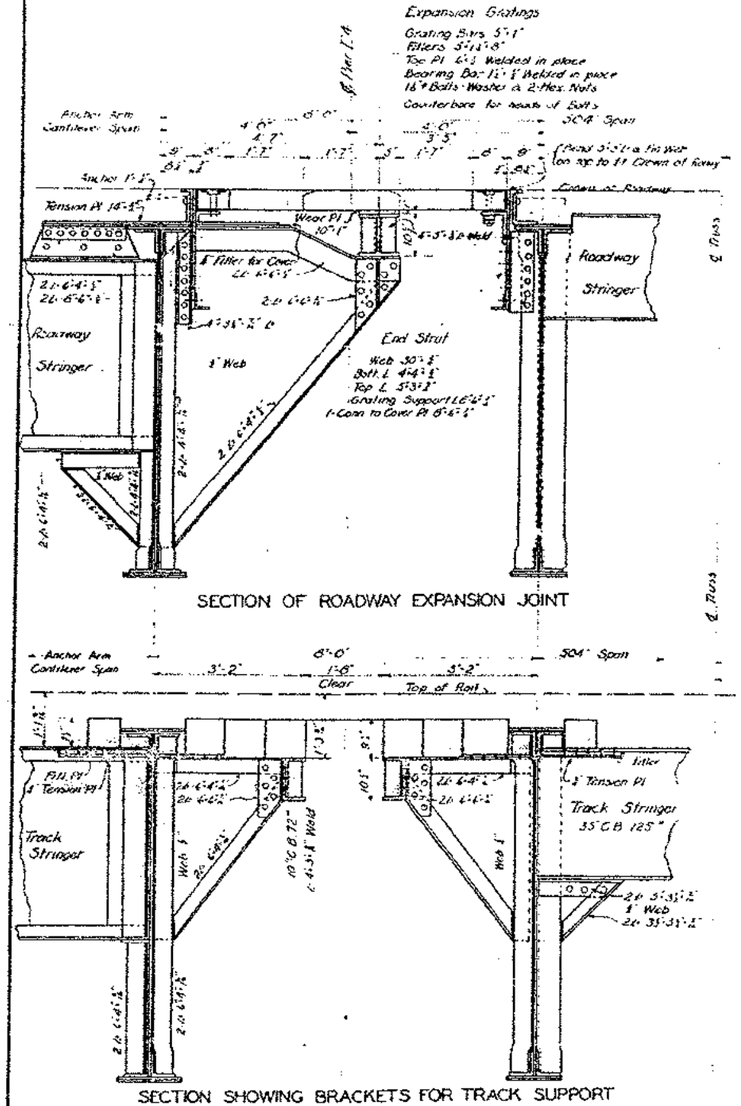
Main Material: Silicon Steel. Stringers and Details Carbon Steel
Rivets: 7/8"ϕ Except in Curb and Rail.
Open Holes: 15/16"ϕ

Revised May 8 1934
Revised May 1 1934
Revised Nov 23 1933
Revised Oct 23 1933

CORRECT
APPROVED
BOARD OF CONSULTING ENGINEERS

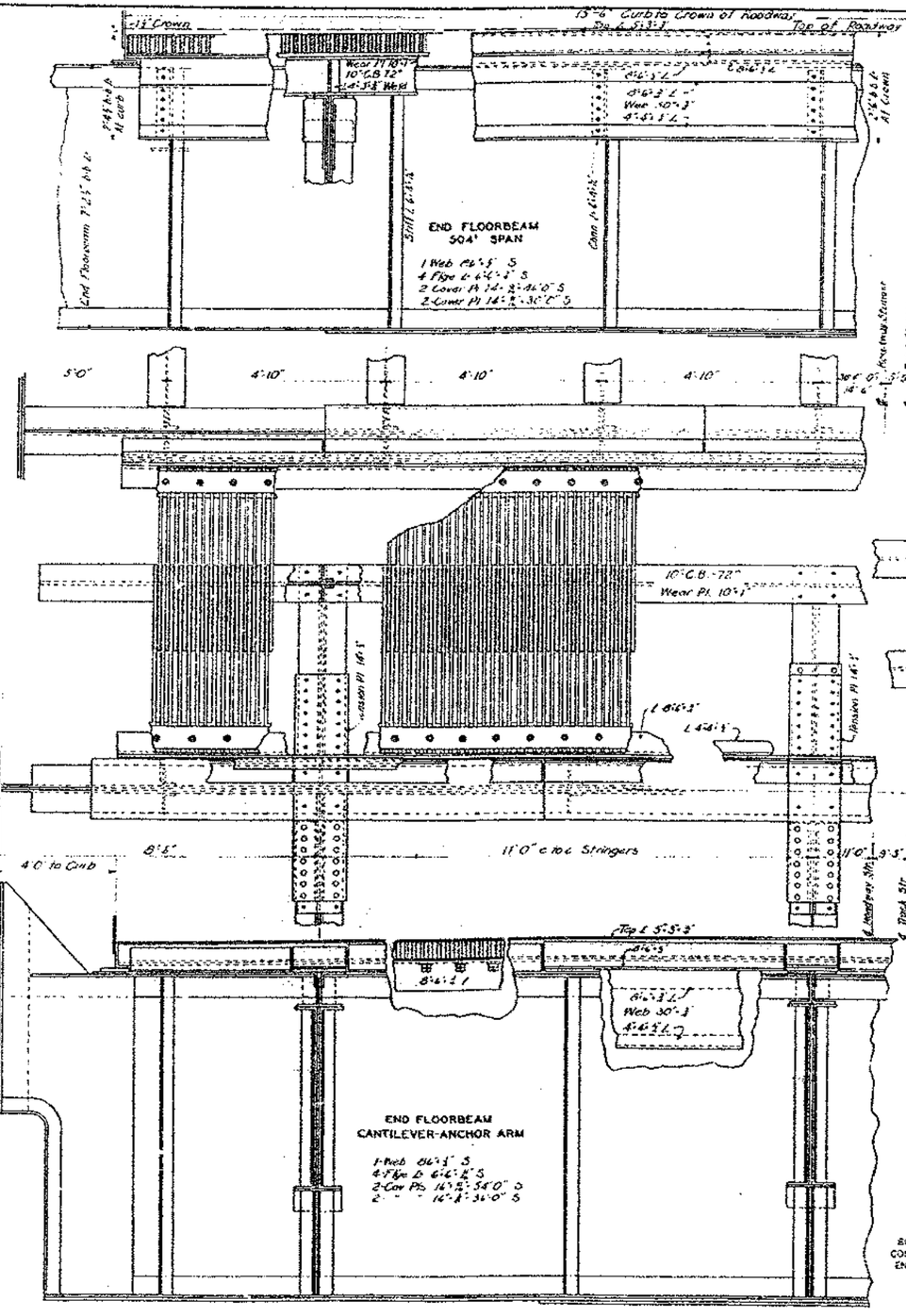
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
GIRDER SPANS ON MOLE
CROSS-SECTION

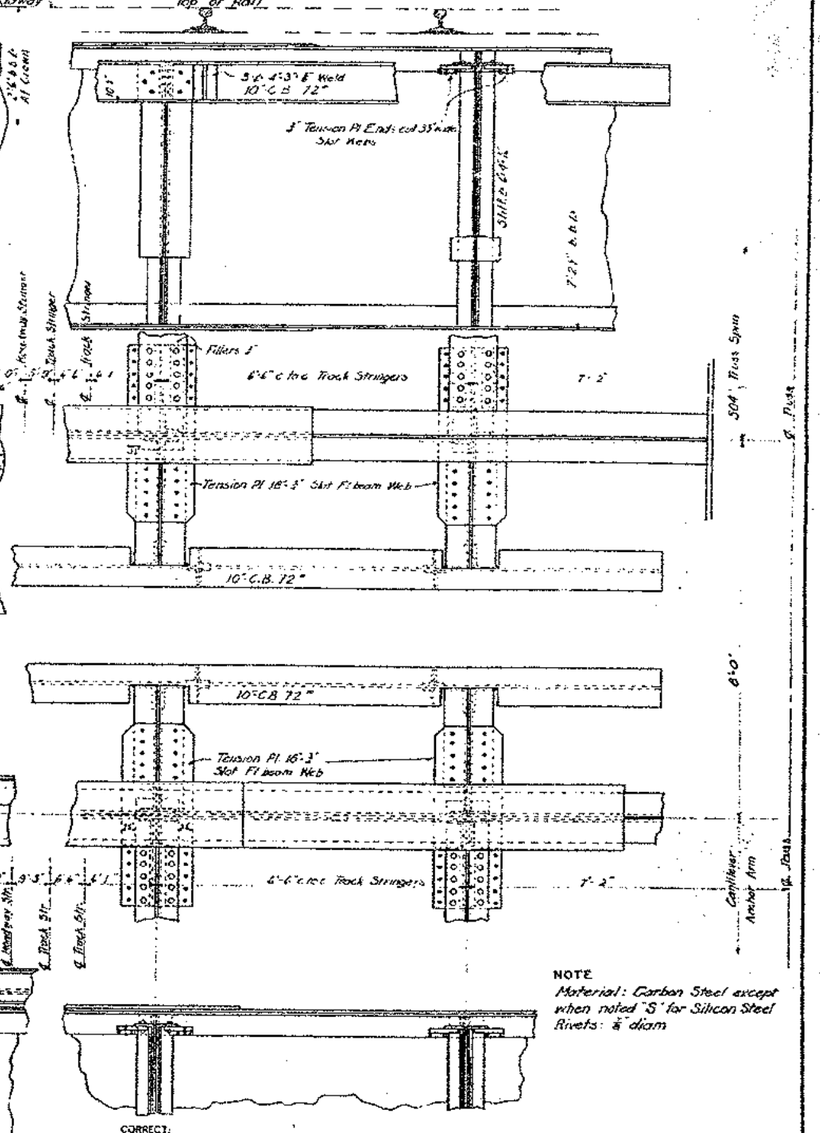
CONTRACT NO 7 SUP. DRAWING NO 73
SEPTEMBER - 1933



SECTION OF ROADWAY EXPANSION JOINT

SECTION SHOWING BRACKETS FOR TRACK SUPPORT





CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

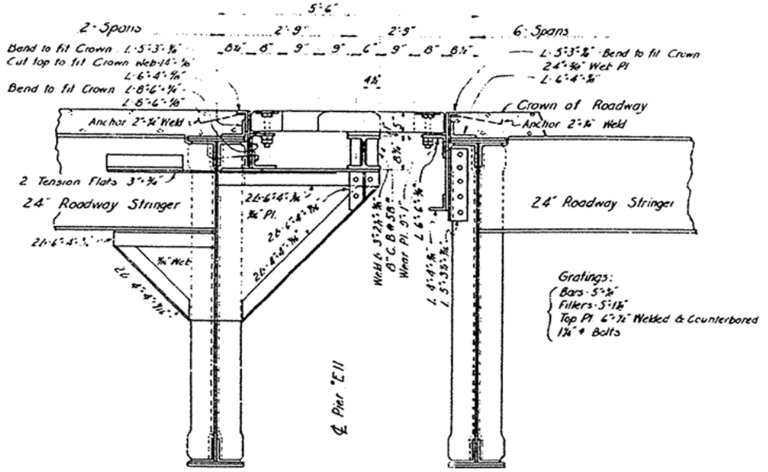
BENT NO. E 4

FRAMING FOR LOWER DECK EXPANSION

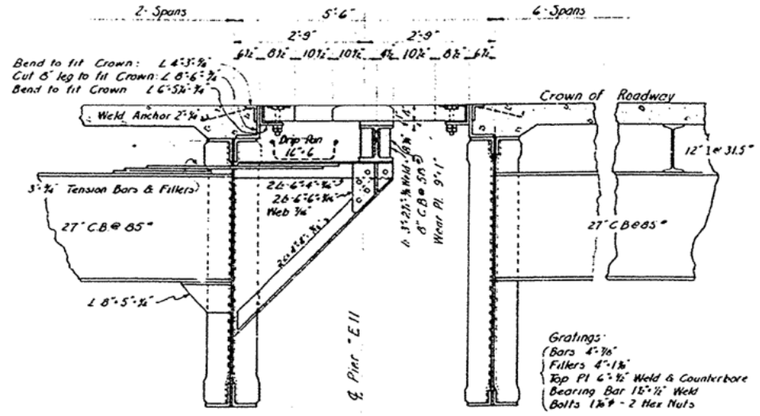
SCALE IN FEET

CONTRACT NO. 7 SUP. DRAWING NO 74

OCTOBER - 1933

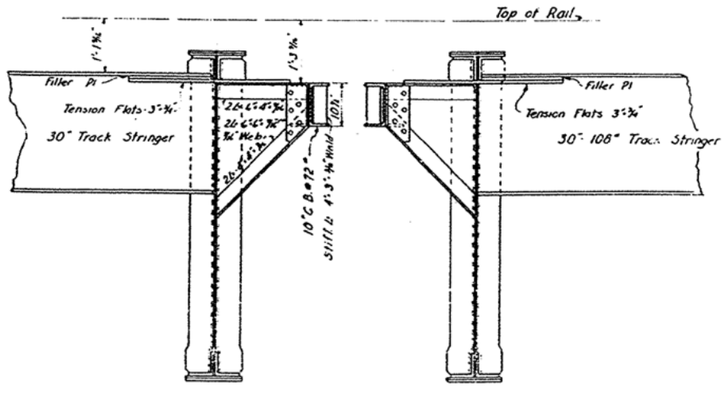


ROADWAY EXPANSION JOINT-LOWER DECK



ROADWAY EXPANSION-UPPER DECK

2'-9" — 2'-9"
2'-4½" — 9" — 2'-4½"



SECTION SHOWING EXPANSION AT TRACKS- LOWER DECK

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING

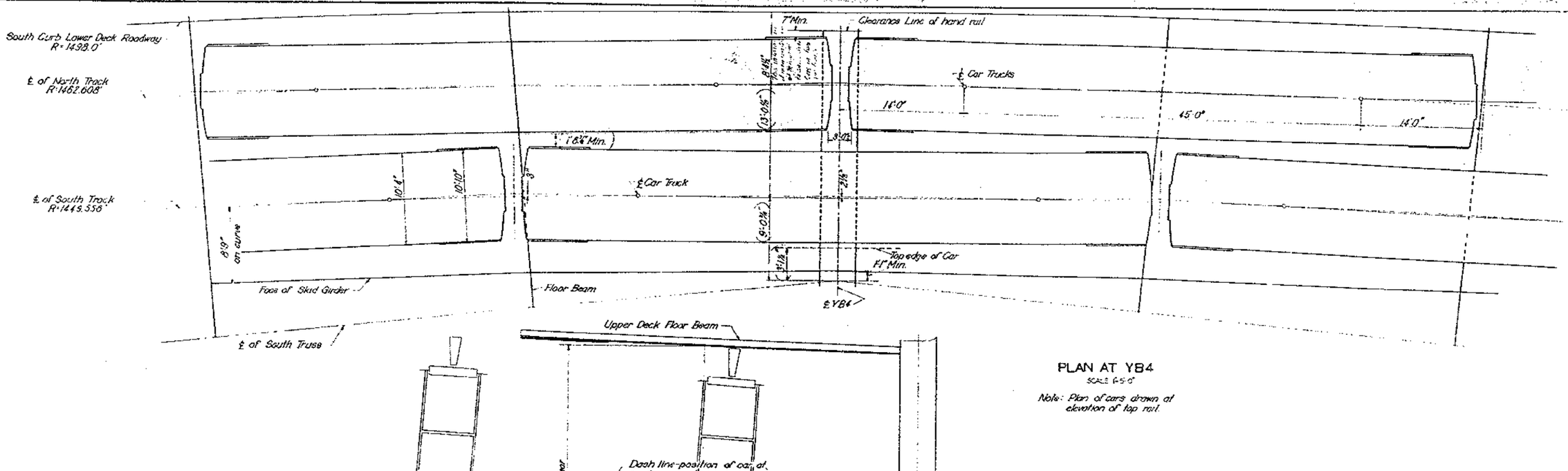
EXPANSION AT BENT E11
FRAMING FOR UPPER & LOWER DECKS

SCALE IN FEET 0 1 2 3

CONTRACT NO 7 SUP DRAWING NO 75

NOVEMBER - 1933

EXHIBIT "D"



PLAN AT YB4
SCALE 1"=5'0"

Note: Plan of cars drawn at elevation of top rail.

CLEARANCE ON 1500 FT. CURVE
S.P. INTERURBAN CARS
SCALE ½"=1'0"

(Revised: Nov. 20 1933)

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

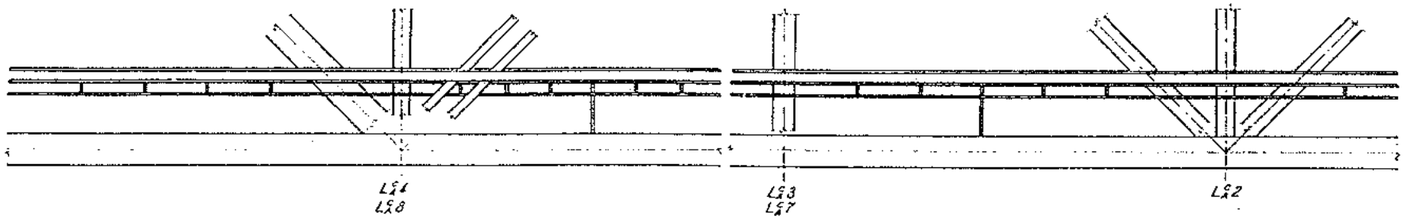
SAN FRANCISCO-OAKLAND BAY BRIDGE

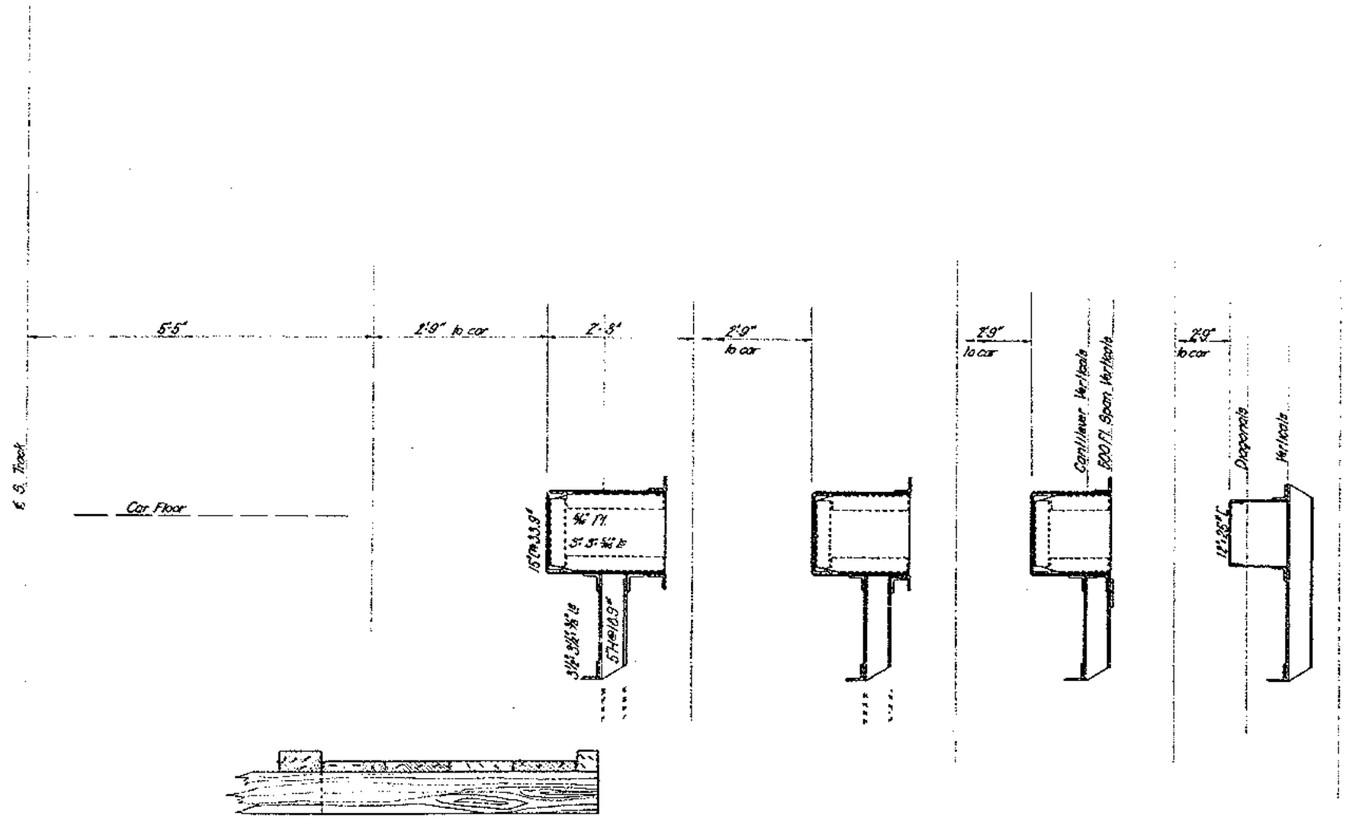
SUPERSTRUCTURE - EAST BAY CROSSING
288 FT. SPANS
CLEARANCES ON 1500 FT. CURVE

SCALE AS SHOWN

CONTRACT NO7 SUP. DRAWING NO 76
NOVEMBER - 1933

EXHIBIT "E"





CORRECT

APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

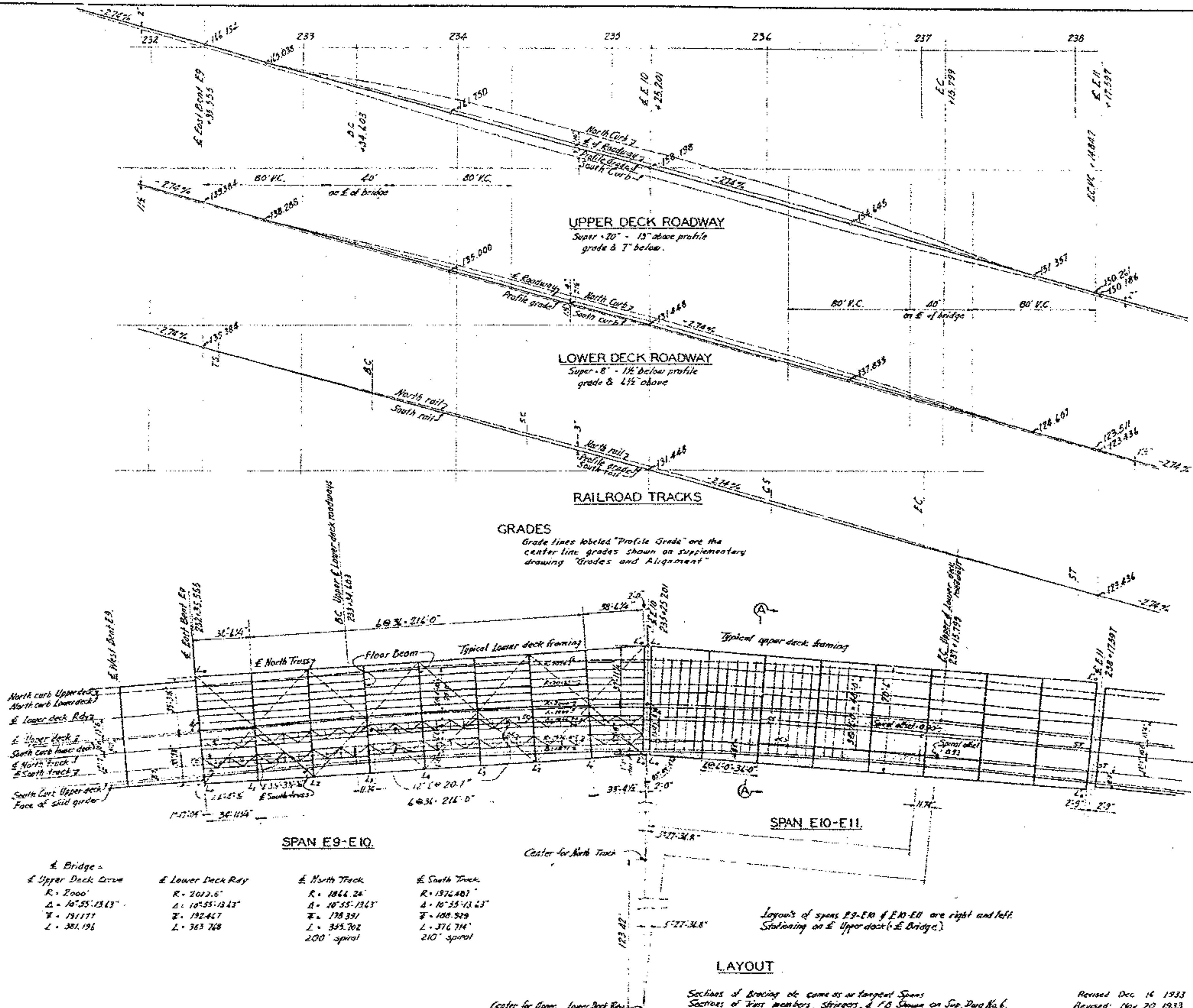
SAN FRANCISCO-OAKLAND BAY BRIDGE

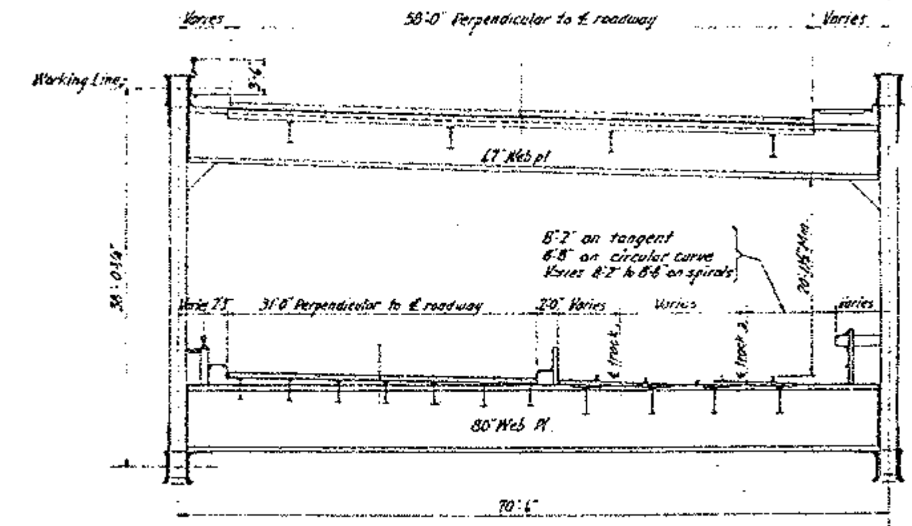
SUPERSTRUCTURE - EAST BAY CROSSING
TYPICAL RAILING SECTIONS

SCALE IN FEET 0 1 2

CONTRACT NO 7 SUPDRAWING NO 77

SEPTEMBER - 1933





SECTION A-A

ELEVATION OF ℄ OF LOWER CHORD AT ℄ OF PIN

Span	E9 - E10	E10 - E11
L₀ North Truss	130.373	122.438
L₀ South Truss	130.330	122.296
L₀ North Truss	122.368	114.446
L₀ South Truss	122.310	114.409

℄ Bridge =
℄ Upper Deck Curve: R = 2000', Δ = 10°55'13.63", T = 191.177, L = 381.196
℄ Lower Deck Rdy: R = 2013.6', Δ = 10°55'13.63", T = 192.467, L = 383.768
℄ North Track: R = 1866.24', Δ = 10°55'13.63", T = 178.391, L = 355.702, 200' spiral
℄ South Track: R = 1976.487', Δ = 10°55'13.63", T = 188.929, L = 376.714', 210' spiral

Layouts of spans E9-E10 & E10-E11 are right and left.
Stationing on ℄ Upper deck (= ℄ Bridge).

Sections of Bracing etc. same as on tangent Spans
Sections of Truss members, Stringers, & FB Shown on Sup. Dwg No. 6.

Revised Dec 16 1933
Revised Nov 20 1933

CORRECT: [signature]
APPROVED: [signature]

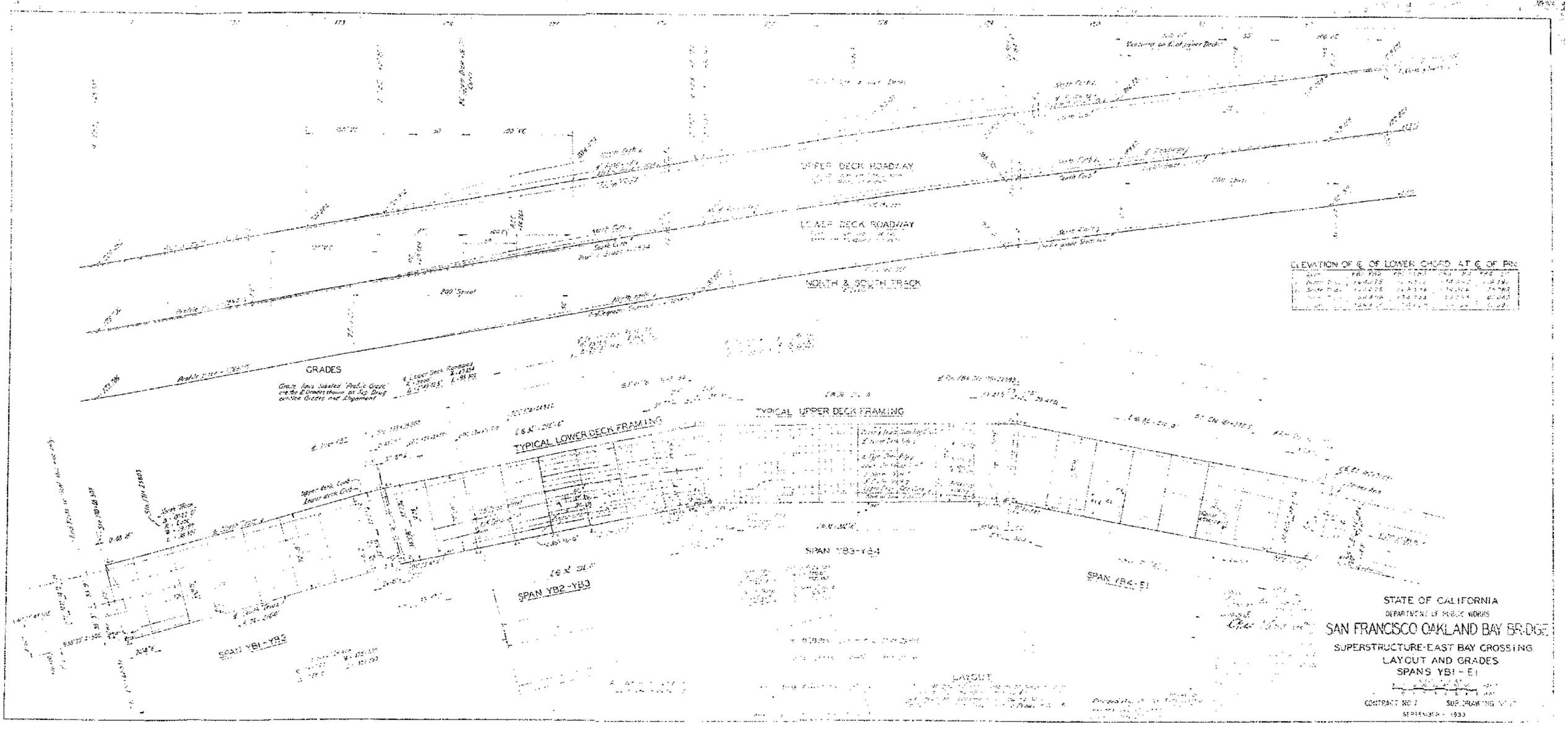
BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
LAYOUT AND GRADES
SPANS E9-E10 & E10-E11.

SCALE IN FEET — HORIZ. / VERT.

CONTRACT NO 7 — SUP. DRAWING NO. 78

SEPTEMBER — 1933



ELEVATION OF ℄ OF LOWER CHORD AT ℄ OF PIER

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO OAKLAND BAY BRIDGE

SUPERSTRUCTURE-EAST BAY CROSSING
LAYOUT AND GRADES
SPANS YB1 - E1

CONTRACT NO. 7 SUP. DRAWING NO. 7

SEPTEMBER - 1933

TOP STRUT 'C'
Cantilever Bent

TOP STRUT 'D'
504' Span Bent

SECTION A-A

ELEVATION OF STRUT 'C'

STRUT 'C'

STRUT 'D'

SECTION B-B

Notes
Material Carbon Steel
Rivets 7/8" diameter

CORRECT

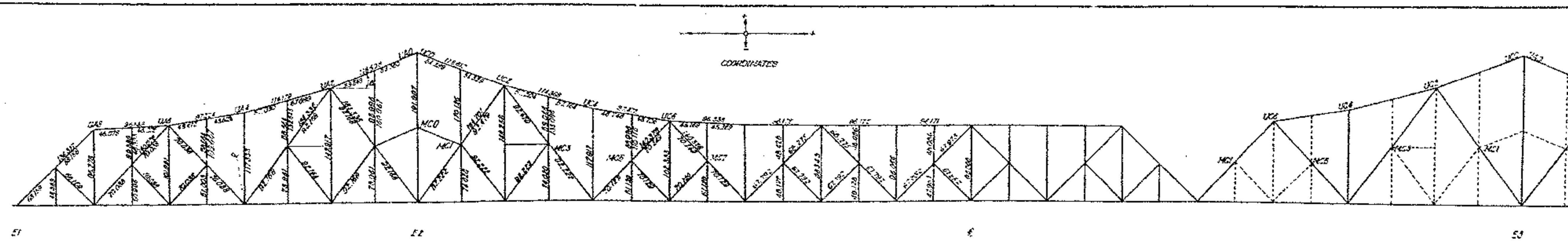
APPROVED

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO-OAKLAND BAY BRIDGE
SUPERSTRUCTURE-EAST BAY CROSSING
LONGITUDINAL EXPANSION JOINT
TOP STRUT-BENT E-4

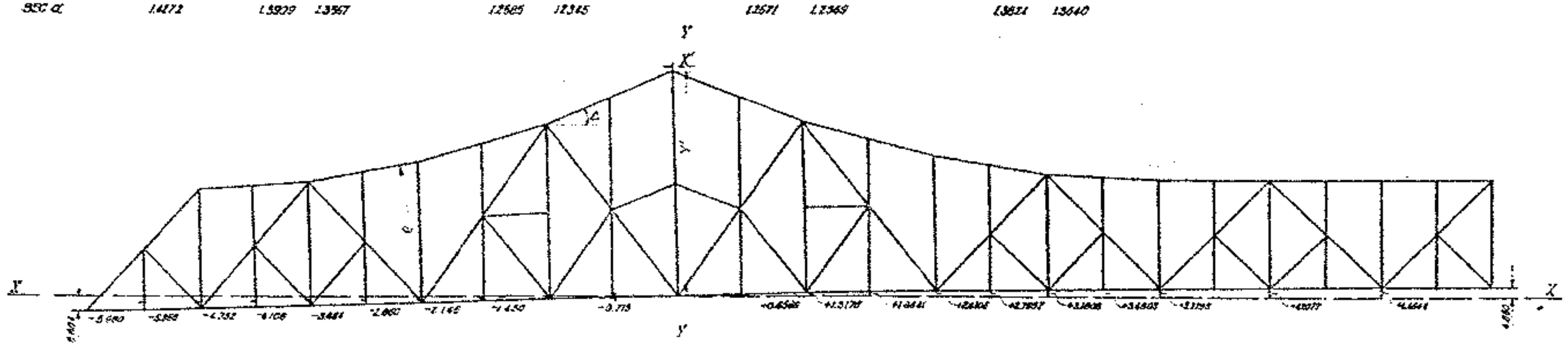
SCALE IN FEET
0 1 2 3

CONTRACT NO 7 SUP DRAWING NO 80
SEPTEMBER - 1933



	LA10	LA9	LA8	LA7	LA6	LA5	LA4	LA3	LA2	LA1	LA0-LC0	LC1	LC2	LC3	LC4	LC5	LC6	LC7	LC8-LS0	LS1	LS2	LS3	LS4	LS5	LS6
LOWER CHORD																									
Y	-6.604	-5.960	-5.356	-4.752	-4.108	-3.454	-2.860	-2.145	-1.430	-0.715	0.000	+0.6588	+1.3176	+1.8641	+2.4105	+2.7357	+3.1806	-3.4803	+3.7738		+4.2027		+4.4641		+4.5500
X	508	460	412	364	316	268	220	165	110	55	0	55	110	165	220	268	316	364	412	460	508	556	604	652	700
SLOPE = TAN	.013	.013	.013	.013	.013	.013	.013	.013	.013	.013	.01878	.01878	.009936	.009936	.008023	.008023	.006240	.006240	.004457	.004457	.002674	.002674	.000891	.000891	
e		96.778		101.00		102.06		147.917		147.917		148.25		148.26		102.333		102.333		96.34		95.54		96.00	
UPPER CHORD																									
V				6.459		16.590		32.012		45.510		42.414		29.288		14.812		4.961							
h				95.932		95.801		109.603		109.525		110.774		110.565		96.329		96.212							
∠HORIZ				3°-51'		9°-49'		16°-17'		22°-34'		20°-57'		14°-49'		8°-44'		2°-57'							
SINE				0.06727		0.17050		0.28039		0.38376		0.35755		0.25575		0.15184		0.05146							
e				96.657		115.87		113.05		178.21		178.44		113.72		116.38		96.615		96.77			96.03		
X'			-1.258		-1.326		-1.525		-1.923		-2.399		-1.684		-1.059		-0.730		-0.518		+0.373		-0.177		0.000
Y'			+91.424		+93.883		+114.463		+146.475		+191.985		+149.561		+120.325		+105.511		+100.550		+100.550		+100.550		+100.550
MAIN DIAGONALS																									
α		44°01'		42°31'		44°01'		35°54'		37°23'		35°51'		37°11'		43°44'		43°33'		45°05'		45°05'		44°58'	
SEC α		1.3909		1.3567		1.3909		1.2346		1.2585		1.2350		1.2552		1.3814		1.3796		1.4163		1.4163		1.4134	
SUB DIAGONALS																									
α			45°31'		44°01'	42°31'		37°23'	35°51'			37°18'	36°03'			45°40'	41°51'								
SEC α			1.4272		1.3909	1.3567		1.2585	1.2345			1.2571	1.2369			1.3824	1.3640								

Notes:- Coordinates given are for geometric centers. Dead load plus uniform live load of 2020 pounds per foot of truss. This loading for south truss. Make north truss the same.



+1.30% — 1400'0" V.C.

UPPER DECK ROADWAY ELEVATIONS	218.914	219.631	220.346	221.060	221.776	222.400	223.024	223.648	224.272	224.896	225.520	225.541	225.608	225.712	225.862	226.058	226.290	226.568	226.889	227.255	227.659	228.178	228.752	229.383	230.070
LOWER DECK ROADWAY ELEVATIONS	192.165	192.881	193.596	194.311	195.026	195.650	196.274	196.898	197.522	198.146	198.770	198.791	198.858	198.962	199.112	199.306	199.540	199.818	200.139	200.505	200.909	201.428	202.002	202.633	203.320

CORRECT:

APPROVED:

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

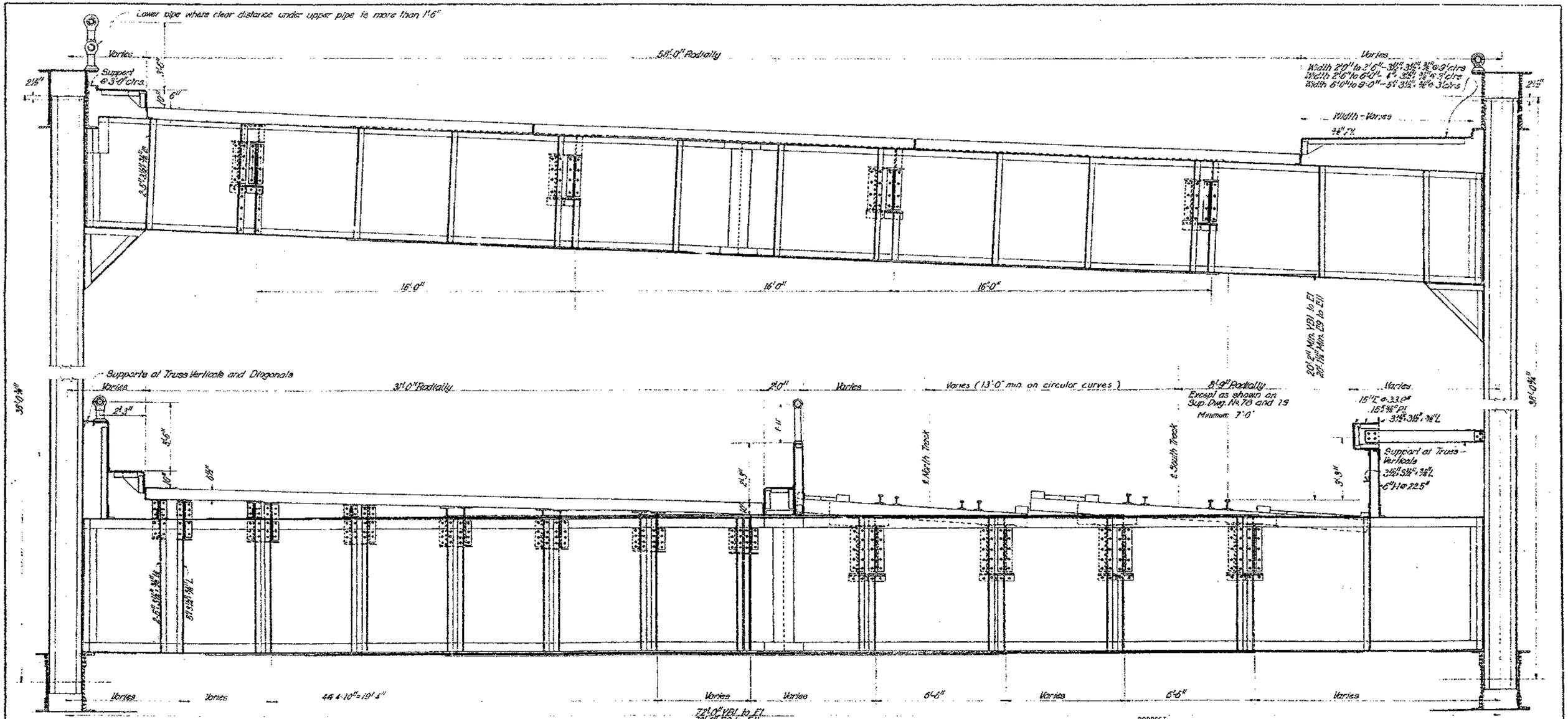
SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE - EAST BAY CROSSING
GEOMETRIC CENTERS
CANTILEVER SPAN

SCALE IN FEET

CONTRACT NO 7 — SUP. DRAWING NO 81

OCTOBER - 1933



TYPICAL CROSS-SECTION

Details which are not shown are the same as section on tangent.
For materials see Sup. Drwg. No. 6.
For grades and layout see Sup. Drwg. Nos. 76 & 79.

CORRECT:
Glenn Beckendorff
Engineer in Charge

APPROVED:
Chas. H. Andrus
Bridge Engineer

BOARD OF CONSULTING ENGINEERS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

SAN FRANCISCO-OAKLAND BAY BRIDGE

SUPERSTRUCTURE - EAST BAY CROSSING
SPANS Y9I TO E1 - E9 TO E11
TYPICAL CROSS - SECTION

SCALE IN FEET 0 1 2 3 4 5

CONTRACT NO 7 SUP. DRAWING 1.0 82

OCTOBER - 1933

Revised Nov. 28 1933